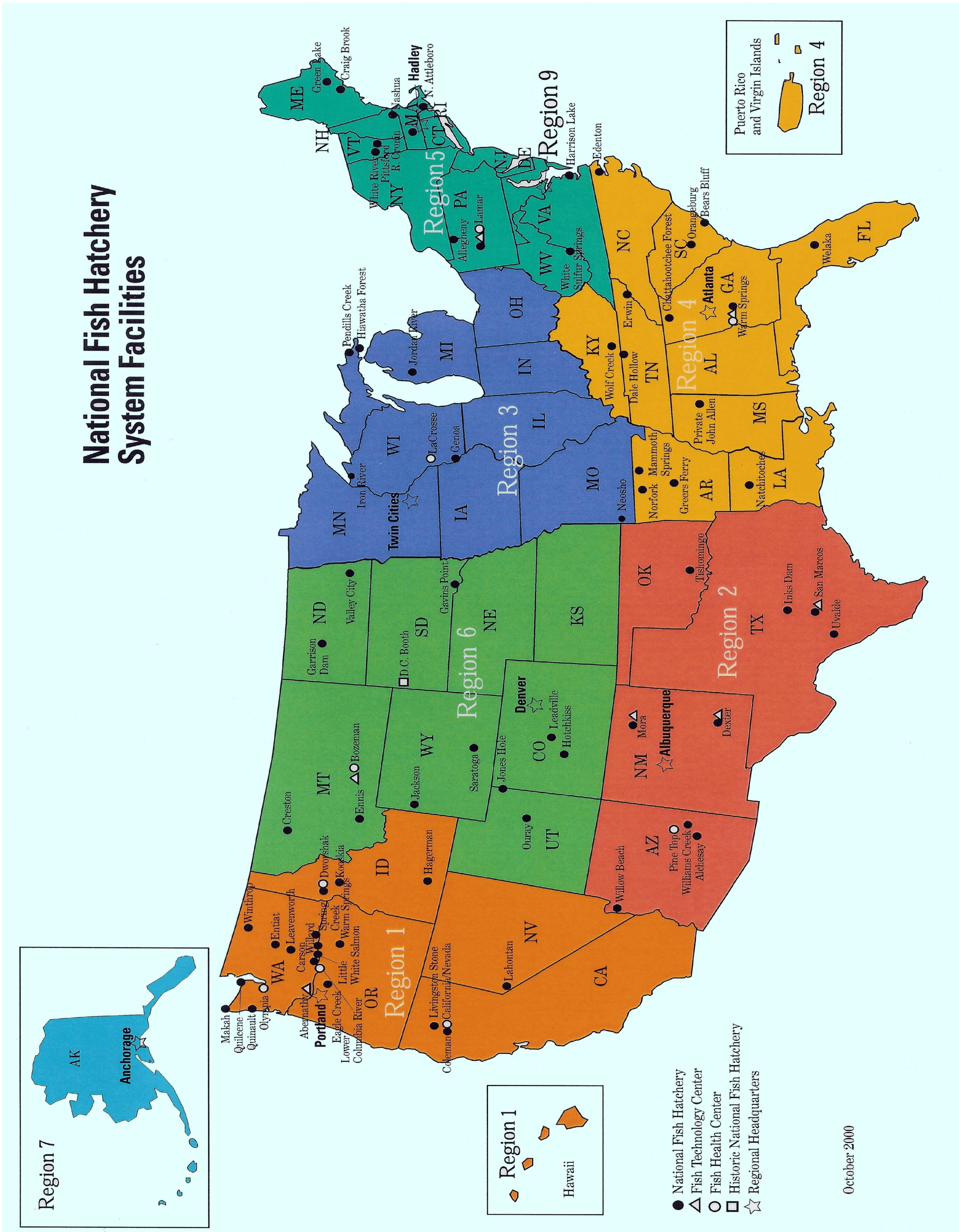
Hatchery Operations and Maintenance

Hatchery Operations and Maintenance	2002 Actual	2003 Estimate	Uncontrollable & Related Changes (+/-)	Program Changes (+/-)	2004 Budget Request	Changes From 2003 (+/-)
Hatchery Operations $(000)	37,111	35,701	+306	+4,805	40,812	+5,111
FTE	*452*	*452*		*+15*	*467*	*+15*
Maintenance & Rehabilitation $(000)	18,251	14,251	0	+2,964	17,215	+2,964
FTE	*0*	*0*		*0*	*0*	*0*
CAM (See General Business Operation Expenses)	[912]	[TBD]			[TBD]	
Total Hatchery O&M $(000)	**55,362**	**49,952**	**+306**	**+7,769**	**58,027**	**+8,075**
FTE	***452***	***452***		***+15***	***467***	***+15***

Program Overview

The National Fish Hatchery System (NFHS) works with partners to recover, restore, and maintain fish and other aquatic resources at self-sustaining levels and to support federal mitigation programs for the benefit of the American public. The NFHS is made up of 69 operational National Fish Hatcheries (NFH's), 7 Fish Technology Centers (FTC's), 9 Fish Health Centers (FHC's), and 1 historic NFH. The NFHS is the national leader in many aspects of fish culture and broodstock management, especially for imperiled species. Innovation and continual adaptation to new and changing needs have pioneered fish culture techniques for a variety of imperiled species such as pallid sturgeon, paddlefish, Atlantic sturgeon, alligator gar, bonytail chub, Colorado pikeminnow, razorback sucker, and numerous other aquatic species. The system's diversity of fish propagation facilities and expertise helps the Service contribute to several cooperative, ecosystem-based projects to recover aquatic species other than fish, such as the endangered Wyoming toad and endangered native mussels. NFHS facilities also serve local communities by providing educational programs in aquatic resource conservation to the public.


National Fish Hatchery
System Facilities
Region 1
Region 2
Region 3
Region 4
Region 5
Region 6
Region 7
Region 9
Hawaii
Puerto Rico
and Virgin Islands
Portland
Albuquerque
Twin Cities
Atlanta
Hadley
Denver
Anchorage
National Fish Hatchery
Fish Technology Center
Fish Health Center
Historic National Fish Hatchery
Regional Headquarters
October 2000

For the past two years, NFHS employees have worked collaboratively with the Department, OMB, and outside partners to reform NFHS programs and management practices, advance the objectives of the President's Management Agenda, and promote the Secretary's 4 C's: conservation through cooperation, communication, and consultation. Emphasis was placed on budget and performance integration.

The NFHS and the Fisheries Program overall completed *Conserving America's Fisheries: Fisheries Program Vision for the Future*, in response to directives from the Appropriations Committees. The *Vision* was based on consensus recommendations developed in coordination with a broad array of stakeholders convened by the Sport Fishing and Boating Partnership Council, and identifies six resource-based "Priority Areas" that center the Fisheries Program.

Priority Areas

- Aquatic Species Conservation and Management
- Aquatic Habitat Conservation and Management
- Cooperation with Native Americans
- Partnerships and Accountability
- Leadership in Science and Technology
- Public Use

Source: "Conserving America's Fisheries: Fisheries Program Vision for the Future" December 2002

By maintaining its varied and complex field stations in good working order, the NFHS supports *DOI's Draft Resource Protection Goal* to *Sustain Biological Communities*. With the average field station 55 years old, and with requests for hatchery participation in implementing restoration and recovery plans increasing, the NFHS must keep its nurturing water supplies flowing and adapt its physical plants to shelter fish and other aquatic species not reared before. Guided by Departmental standards and hand-in-hand with other Service Programs, the NFHS continues to bring its facility information systems into a new Service Asset and Maintenance Management System (SAMMS), a Service adaptation of the MAXIMO software that has been adopted within the Department. Together with the Service's standardized condition assessment process, SAMMS will help provide credible data that should improve facility management and increase accountability.

The Service has not yet developed performance measures for this program. Measures will be developed as part of the Service's operational plan. The Service is in the process of developing a new operational performance plan that directly aligns all program activities and objectives with the Secretary's four strategic plan mission components - Resource Protection, Resource Use, Recreation, and Serving Communities. The Service's operational plan will contain new long-term and annual performance goals and measures to guide the delivery of FWS program implementation, management reform, and budget formulation. The alignment and integration of program performance with budget formulation will provide the context for transparent accountability and the foundation for continual improvement. The Service anticipates completion of a new operational plan by fall of 2003

Hatchery Operations

2004 Program Overview

Aquatic Species Conservation and Management

Recovery - The NFHS is committed to accelerating the recovery of aquatic species listed under the Endangered Species Act (ESA) through the production and distribution of healthy and genetically

appropriate animals and plants to re-establish wild populations. These activities support the *DOI's Draft Resource Protection Goal to* Sustain Biological Communities on DOI Managed and Influenced Lands and Waters by Managing Populations to Self-sustaining Levels for Specific Species by completing 44 percent of NFHS-related recovery objectives identified in recovery plans.

Recovering and managing listed aquatic species to self-sustaining levels usually involves a complicated network of programs that address current threats to habitat as well as species themselves. Recovery programs address these threats by restoring habitat as well as supplementing native fish with artificially propagated fish where necessary to ensure the survival of the species or population. The NFHS is one of the programs that contribute to these efforts, and one means of measuring the performance of the NFHS contribution in accomplishing this outcomes is by looking at the NFHS success in accomplishing NFHS-specific tasks identified in recovery plans.

- The NFHS will continue its efforts to recover listed species, including the threatened Apache and endangered Gila trout in the Southwest. As a result of coordinated habitat restoration and captive propagation programs, recovery plan targets for re-establishing self-sustaining populations for these unique, native species are within several populations of meeting recovery goals. Limited recreational fishing opportunities have already been renewed for the Apache trout. These species are slated for down-listing and de-listing, respectively, in the near future.

- As a partner with several state and other federal agencies in recovering the endangered pallid sturgeon, to self-sustaining levels, the NFHS currently plays a major role in completing more than a dozen of the 56 tasks in the Recovery Plan, and a lesser role in more than a dozen others. More than 70,000 pallid sturgeon have been reared, marked, and released into the Missouri River in accordance with state-of-the-art protocols developed per objectives in the species' Recovery Plan.

- Nearly three quarters (56 plans, covering 72 species) of all ESA Recovery Plans for fish (76 plans, covering 96 species) recommend developing or using captive propagation technology or refugia as part of Recovery Plan "strategies" to re-establish wild populations (Table 1). The NFHS is currently helping complete tasks specified in approved Recovery Plans for 45 fish species. In addition, NFHS expertise is helping meet performance targets for 14 listed non-fish aquatic species, representing mollusks, amphibians, and plants, as called for in their Recovery Plans.

Table 1. Number of imperiled species addressed by the NFHS as of December, 2002.

	Fish Species	Other Aquatic Species
Endangered	26	13
Threatened	19	1
Candidate	3	2
Petitioned	1	0
Special Concern	12	5
Total	**61**	**21**

Restoration - The NFHS's restoration efforts directly support *DOI's Draft Strategic Resource Protection Goal* to *Sustain Biological Communities on DOI Managed and Influenced Lands and Waters by Managing Populations to Self-sustaining Levels for Specific Species* by completing 71 percent of the NFHS-related objectives identified in fishery management plans. In support of this Goal, the NFHS will continue to develop fish culture technologies, conduct fish health assessments and diagnostics, and produce healthy, genetically-fit fish as called for in fishery management plans. Collectively these activities will continue in FY 2004 to help restore and maintain fish and other aquatic species, such as paddlefish, lake trout, coaster brook trout, and American shad, to self-sustaining levels. Performance of the NFHS in restoring depleted native species not yet listed under the ESA is measured by accomplishment of specific tasks identified in fishery management plans.

Restoring and managing native species to self-sustaining levels usually involves a complicated network of programs that address current threats to habitat as well as species themselves. Restoration programs address these threats by restoring habitat as well as supplementing native fish with artificially propagated fish where necessary to ensure the success of the species or population. The NFHS is one of the programs that contribute to these efforts and one means of measuring the performance of the NFHS contribution in accomplishing this outcome is by looking at the NFHS success in accomplishing NFHS-specific objectives identified in fisheries management plans.

- The American shad, once the most common fish in the James River in Virginia and found in abundance in Maryland, dwindled over the years as dams splintered its spawning grounds. Hatchery and management biologists co-located at the Harrison Lake NFH (VA), working with states, NGO's, the Pamunkey Indian Tribe, and private entities under the coastwide fishery management plan for American shad, have led efforts to integrate habitat restoration with fish reintroduction. In FY 2004, the NFHS will continue to accelerate the restoration of this species to self-sustaining levels in its native habitat.

- Restoring Atlantic salmon decimated by habitat loss and over-harvest is a multi-jurisdictional priority in and along southern New England Rivers. Six NFH's throughout New England are working in conjunction with habitat restoration efforts to meet restoration objectives in the *Strategic Plan for the Restoration of Atlantic Salmon to Connecticut River* and the *Maine Atlantic Salmon Restoration and Management Plan 1995-2000.*

Aquatic Habitat Conservation and Management

The NFHS contributes to cooperative habitat conservation efforts in several ways. Some activities directly improve habitats by providing whole plants or propagules for habitat restoration, other projects provide "explorer" or "research" fish to help determine habitat requirements of various imperiled species. Other NFH's provide for a cleaner environment by adopting innovative technology to meet EPA water effluent standards. In addition, the National Wild Fish Health Survey (NWFHS) monitors actual habitat health that affects wild aquatic animals. In FY 2004, the NFHS will continue these and similar contributions to cooperative habitat conservation efforts. These activities contribute toward the *DOI's Draft Strategic Goals* for *Resource Protection to Improve Health of Watersheds and Landscapes that are DOI Managed or Influenced,* intermediate outcome strategy *to restore and maintain proper function to watersheds and landscape;* and to *Sustain Biological Communities on DOI Influenced Lands and Waters,* intermediate outcome strategy to *create habitat conditions for biological communities to flourish.*

- Wild celery and redhead grass grown at Harrison Lake NFH (VA), in partnership with the Chesapeake Bay Foundation and the Alliance for the Chesapeake Bay, serve as a dependable

source of plant propagules for restoring submerged aquatic vegetation in the Chesapeake Bay, where human activities have caused an 88 percent decline in such plants. Similar work will be continued and/or expanded in FY 2004.

- Tracking the release of 187,000 coaster brook trout in Lake Superior bays and tributaries is helping to identify essential early rearing areas, information used by Federal and State co-managers to protect and improve these critical habitats. In FY 2004, the NFHS will continue to propagate and mark fish to obtain habitat information.

- The National Wild Fish Health Survey (NWFHS, GIS-based, and Internet accessible) provides information about wild fish diseases that can indicate the overall health/fitness of an ecosystem and its potential to provide suitable habitat for any fish being moved into - or out of - that ecosystem as part of a restoration, recovery or management plan. In 2004, the NFHS will expand the NWFHS and increase FHC analytical capabilities by seeking new State partners.

Cooperation with Native Americans
The NFHS helps the Service meet the *DOI's Draft Goal* of *Serving Communities to Fulfill Indian Trust Responsibilities* and to *Improve Indian Trust Beneficiary Services* by providing fish and wildlife management assistance to American Indian Tribes. The NFHS will continue to play a major role to help the Service fulfill Tribal Trust Responsibilities FY 2004 and beyond.

- The Service has a long history of fulfilling Indian Tribal Trust Responsibilities on behalf of the U.S. Government by providing subsistence fish species to Treaty Tribes. Today, such relationship has evolved beyond simply producing food fish as a way of economic assistance. The NFHS provides management assistance that has helped the Tribes re-establish and maintain native fish populations on Tribal lands. Some of these fish species, such as the threatened Apache trout, are an important cultural resource for Native People. In FY 2004, the NFHS will continue its commitment to fulfilling Tribal Trust Responsibilities and seeking Tribal partnerships to assist with restoration of native species that are important to the Tribes both on and off Tribal lands.

Partnerships and Accountability
Strategic Planning - The NFHS and the Fisheries Program overall completed *Conserving America's Fisheries: the Fisheries Program Vision for the Future*. The *Vision* was based on consensus recommendations developed in coordination with a broad array of stakeholders convened by the Sport Fishing and Boating Partnership Council. The *Vision* was closely coordinated with the Strategic Plan being developed by the Department of the Interior, and with the Service's Planning and Evaluation Office that will develop the Service's operational performance plan, to ensure agreement and consistency at each management level. The Service has begun developing Regional step-down plans that will identify Regional actions that will be taken to achieve the goals and objectives in the Fisheries *Vision* and the draft *DOI Strategic Plan*. The Regional step-down plans will be rolled back up and assembled into the actual Strategic Plan for the Service's Fisheries Program, with implementation underway in FY 2004.

OMB's Program Assessment Rating Tool (PART) Review
During formulation of the 2004 budget, the Administration began using the Program Assessment Rating Tool (PART) to identify strengths and weaknesses of programs and to inform budget, management, and policy recommendations. The process generated extensive information on program effectiveness and accountability including the need for additional performance measures.

The principle PART findings for the National Fish Hatchery System program are:

- Program design was found to have significant impact in addressing specific interests , problems, or needs. However, the program purpose was not clear.
- Program planning received high scores, but the program budget could not clearly be aligned with program performance or goals.
- The PART determined that the NFHS was collecting timely, credible performance information.
- To a small extent, the program demonstrated adequate progress in achieving its long-term outcome goal under the old DOI Strategic Plan.
- The need for a measure of efficiency in program operations was identified.

How did the budget respond to the PART findings?

- Program purpose and design are addressed in the budget by linking performance to new DOI Strategic Plan and the Fishery Program "Vision for the Future."
- The PART established five long-term goals (included in the FY04 Budget Justification) for the NFHS that link operation activities with fishery management plan and recovery plan objectives, survival targets and fish health objectives.
- Current data collected to report performance information is being examined in the budget development process to determine its capability and future needs for reporting under new performance measures for which baselines will be established in FY2003.
- An efficiency measure for producing rainbow trout had developed, however, a revised measure for efficiency is under development by a Service workgroup with a target completion date early 2003.

Leadership in Science and Technology

Science and Technology - The Service's Fish Technology Centers (FTC's) and Fish Health Centers (FHC's) provide scientific and technical leadership to solve "on the ground" hatchery and fishery management problems that can make or break restoration and recovery programs, as well as mitigation programs. Their accomplishments contribute to *DOI Draft Resource Protection Goals to Sustain Biological Communities on DOI Managed and Influenced Lands and Waters by Improving Information Base, Resource Management Practices, and Technical Assistance*. Over the years, contributions in genetic analyses, nutrition, population dynamics, cryopreservation, biometrics, culture technologies, disease diagnostics, and new approved drugs have improved the quality and relevance of good science in hatchery production programs and their evaluation, and in broader fisheries management activities. The FTC's and FHC's will continue to advance science and technology and provide vital support to hatchery and fisheries management activities in FY 2004.

- The Service's Investigational New Animal Drug program has played a critical role in securing FDA approval for drugs used in captive propagation, by providing corroborative data required for approval of 16 drugs to treat aquatic animal disease. These drugs are essential for the production of high quality fish species for recovery and restoration.

- The Bozeman FTC (MT) has developed diets that are more adapted to natural feeding behaviors at different life stages for several fish species and that improved survival of post-spawned Atlantic salmon and steelhead. Improvements to fish health, growth, and survival are pivotal to restoration programs for these species. Newly formulated diets also increased growth rates for endangered razorback suckers, thereby decreasing the time and expense of holding them in a hatchery.

The nine FHC's provide valuable support to recovery and restoration activities by working cooperatively

with federal, state, and tribal fishery managers to monitor, diagnose, and control fish pathogens and diseases, such as whirling disease, spring viremia of carp, largemouth bass virus, and infectious salmon anemia.

- Data generated by the FHC's for the National Wild Fish Health Survey (NWFHS) are critical to the success of restoration, recovery, and mitigation programs in 41 states. Samples from 171 species have been analyzed to better formulate restoration, recovery, and resource management plans for several imperiled fish species including bull trout, greenback cutthroat trout, Atlantic salmon, pallid sturgeon, Gila trout, and Ozette sockeye salmon. **Example:** Distinct population segments of bull trout in the Columbia and Klamath Rivers are defined as threatened species under the Endangered Species Act (ESA). Many factors have been implicated in its earlier decline, including artificial barriers that prevent migration; Cabinet Gorge Dam (CGD) is an example of such an artificial barrier. In an attempt to reintroduce bull trout to historical habitats, it was proposed that some bull trout be moved from below CGD to areas above the dam. However, the differences in fish communities above and below the dam suggested that pathogens within the two regions may likewise differ, and that any differences above the dam may be an impediment to the survival of the fish transplanted there. Information from the NWFHS Database indicated that very few differences existed in the distribution and prevalence of pathogens above and below CGD. Based in part on this information, the Montana Fish, Wildlife and Parks approved the fish move.

- To support the President's Management Agenda for expanded E-government practice, the NWFHS Database is available via the Internet to the Service partner agencies and the public.

The NFHS established the Aquatic Animal Drug Approval Partnership (AADAP) in FY 2003 to help meet the *DOI's Draft Resource Protection Goal* to *Improve Health of Watersheds and Landscapes on DOI Managed and Influenced Lands and Waters* by *Improving Information Base, Resource Management Practices, and Technical Assistance.* The AADAP is a partner-based national program that will maintain the health and fitness of aquatic species in captivity by obtaining acutely needed approvals for animal drugs from the Food and Drug Administration (FDA). In a previous partnership established under a MOU between the International Association of Fish and Wildlife Agencies (on behalf of the 50 states), the USGS-BRD, and the USFWS, the USGS received state-contributed funds for their role in this collaborative work to coordinate aquatic species drug approval efforts. The project established by this MOU has ended, and state contributions are no longer being received. Much needed work remains to be completed. The new partnership led by the Service spreads the otherwise prohibitive cost of the applied research and development needed for FDA approval among the States, Tribes, and private aquaculture community, and enables approved drugs to be manufactured affordably. The AADAP builds on the work of the Service's National INAD Office (Bozeman, MT) and will incorporate participation and cooperation of all Service Regions and outside partners. The USGS will remain in active partner with work continuing at their Upper Midwest Environmental Science Center (UMESC) in LaCrosse, WI. However, based on current funding, aquatic species drug approval work at UMESC will be "scaled back" to approximately 30% of the level of previous involvement. Work conducted at the UMESC **will not** be duplicative of similar-type work conducted by the USFWS.

Public Use

Recreation - Restoration of depleted populations of native game fish by the NFHS provides and enhances recreational fishing opportunities for the nation's 58 million recreational anglers. Fishing for trout produced by the NFHS in the southeastern U.S. is estimated to generate $1.6 million in State income tax revenue, $5.2 million in State sales tax revenue, and over $5.4 million in Federal income tax

revenue. These activities support the *DOI's Draft Recreation Goal to Ensure a Quality Experience and Enjoyment of Natural and Cultural Resources on DOI Managed and Partnered Land and Water*, by indirectly supporting the *DOI's Draft Recreation Goal to Enhance the Quality of Recreation Opportunities*. The NFHS will continue these activities in FY 2004.

- Historically, most of Lake Superior's 3,000 miles of shoreline and 100 tributaries supported fishable populations of coaster brook trout, a highly sought-after recreational species. Over-harvest and habitat loss decimated the populations to a point where only a few of remnant stocks remained. Using river specific broodstocks developed by the NFHS, the Service is reestablishing populations in Siskiwit Bay, Isle Royale National Park (MI) in partnership with the National Park Service, Keweenaw Bay Indian Community, the Michigan Department of Natural Resources, and Trout Unlimited.

Mitigation - When Federal locks and dams were constructed, Congress and the Federal government committed to mitigate impacts on recreational, commercial, and tribal fisheries. Fish production by the NFH's for mitigation in the Southeast is estimated to generate over $107 million annually in direct expenditures on recreational fishing activities and to maintain over 2,800 jobs. The Service supports mitigation fishery programs through the NFHS to address the adverse impacts of some of these projects. These programs support the *DOI Draft Recreation Goal to Enhance the Quality of Recreational Opportunities* in areas that would otherwise not have such opportunities as a result of the environmental impact of the water resource development projects.

Over the years, many project-specific authorities have led to a jumble of mechanisms and responsibilities for funding and operating Federal mitigation fisheries. In some cases federal water project development agencies or the beneficiaries of those federal projects fund mitigation costs. The Service is currently working with the Bureau of Reclamation and the Department to determine if there are additional mitigation hatchery programs that should be funded by the Bureau of Reclamation. Similar efforts with other Federal agencies will be pursued in the future. In the meantime, the Service will continue its ongoing mitigation fisheries programs.

FY 2002 Program Performance Accomplishments

With the $37.1 million appropriated in FY2002, the NFHS, in addition to facility maintenance, visitation, and volunteer goals, contributed to goals reported by other Service Programs in 2002, including Sustainability of Fish and Wildlife Populations: assisting with stabilizing and improving ESA listed species, assisting with species at risk to preclude listing, and assisting with interjurisdictional fish restoration. Important 2002 program accomplishments include:

- Understanding the different survival rates of specific bonytail chub family groups in the wild is a breakthrough in maintaining the genetic integrity of this most endangered fish species in North America. Dexter (NM) and Mora (NM) NFH & FTC's, and Willow Beach NFH (AZ), provided survival data from hatchery matings through genetic analysis and DNA isolation from 24 unknown year class adults from Lake Mohave.

- Recovery and restoration of native, recreationally valuable pallid sturgeon, Atlantic sturgeon, Atlantic salmon, and other fish was accelerated using viable sperm preserved with cryopreservation techniques developed at the Warm Springs FTC (GA).

- Five NFH's made major contributions to recovery of endangered mussels in the Southeast United States. The Warm Springs NFH (GA) continued to develop and refine techniques for culturing

and rearing imperiled and surrogate mussel species, including techniques for marking and measuring growth. The Mammoth Springs NFH (AR), in cooperation with Arkansas State University, determined the host fish for the endangered speckled pocketbook mussel. NFHS activities have resulted in development of scientifically sound mussel culturing and rearing techniques, which are priority objectives in endangered mussel recovery plans.

- Working with the USGS Conte Lab and two Service FRO's, the Nashua NFH (NH) completed tasks as identified in recovery plans necessary for the successful restoration of Atlantic salmon in the Merrimac River by identifying genetic characteristics of adult sea run Atlantic salmon, establishing DNA profiles for mating plans, and evaluating the most productive stocking locations and habitat types.

- The National Wild Fish Health Survey met scientific and technical goals of several recovery and restoration programs by analyzing samples collected from 353 of the 2,111 of U.S. Geological Survey watershed units.

- The NFHS took a major step forward in recovering costs of its mitigation activities by identifying all hatchery programs providing mitigation services for federal water resource development projects, the legal authorities for the Service to conduct the mitigation work, associated costs, and relevant agencies responsible for such projects. The report recommended strategies, mechanisms, and potential legislative fixes to facilitate full cost-recovery of these services as recommended by GAO and by Congress in the FY 2002 Interior Appropriations Conference Report. This report is currently under Departmental -review.

FY 2003 Performance Goal Estimates

For 2003, the NFHS will begin measuring performance under new measures that step down from the Department's new *Draft Strategic Plan*, supporting the *DOI's Draft Resource Protection Goal* to sustain biological communities by *Managing Populations to Self-sustaining Levels for Specific Species* and *Improving Information Base, Resource Management Practices, and Technical Assistance.* The $35.7 million in the FY 2003 President's budget will ensure that these measures, and planned performance levels for 2003 are achieved. Specific examples per DOI intermediate strategy include:

Manage Populations to Self-sustaining Levels for Specific Species:

- The NFHS will continue to ensure the survival of threatened and endangered species and promote their recovery by maintaining listed species in genetic refugia and bringing listed species into refugia on an emergency basis in the event of catastrophic events such as forest fires, drought, and chemical spills. Species include the beautiful shiner, Big Bend gambusia, Rio Grande silvery minnow, desert pupfish, fountain darter, San Marcos salamander, and others.

- The Jordan River (MI), Pendills Creek (MI), and Iron River (WI) NFH's will continue to meet the *U.S. v. Michigan* Consent Decree stocking goal by stocking three million lake trout into the Lake Michigan. Cooperative evaluation programs will be conducted to measure progress in restoring this species to the Great Lakes.

- The NFHS will continue to play critical roles in recovering threatened and endangered species by focusing on priority Recovery Plan targets for captive propagation. Specifically, the NFHS will maintain the number of endangered and threatened fish species distribution at the current level of 10 million fish, while improving the quality of fish being produced in terms of genetic-fitness, high survivability, and good health (See Table 2). Listed fish and other aquatic species

will be reintroduced into restored habitat to obtain life history information and to reestablish populations. Species include endangered Atlantic salmon, pallid sturgeon, Apache trout, Gila trout, chinook salmon, chum salmon, bonytail chub, Colorado pikeminnow, razorback sucker, and others.

Improving Information Base, Resource Management Practice, and Technical Assistance:

- FTC's will continue to assist cooperative restoration and recovery programs by developing culture techniques, including nutrition and diet development, for imperiled aquatic species as recommended in approved recovery plans and fishery management plans. Species include the alligator gar, loach minnow, native trout, native mussels, and rare spring fishes. FTC's will continue to transfer technology to the private sector, as appropriate.

Table 2. FY 2002 and FY 2003 Fish and Fish Egg Distribution[1]

	No. of Fish	Lbs. Of Fish	No. of Eggs
FY 2002 Actual			
Recovery	10,105,775	188,206	7,449,644
Restoration	26,681,523	744,558	28,553,121
Mitigation	84,862,622	3,741,438	26,189,289
Special Conservation	27,636,138	766,586	33,690,908
TOTAL	**149,286,058**	**5,440,788**	**95,882,962**
FY 2003 Estimate (President's Budget)			
Recovery	10,000,000	200,000	7,000,000
Restoration	27,000,000	750,000	25,000,000
Mitigation	74,000,000	2,000,000	20,000,000
Special Conservation	20,000,000	500,000	30,000,000
TOTAL	**131,000,000**	**3,450,000**	**82,000,000**

1 Fish and Fish egg distribution are outputs related to higher level performance goals and measures. The 2003 estimates are based on historical levels, adjusted for the proposed reduction in the 2003 budget. These outputs are not goals, and actual distribution will depend on implementation of higher level goals.

Recovery: (Sustain biological communities.)
Activities contributing to down-listing or de- listing federally endangered or threatened species.
Restoration: (Sustain biological communities.)
Activities contributing to re-establishing self-sustaining native populations at levels of abundance and spatial distributions well above the threshold for de-listing or listing.
Mitigation: (Ensure quality of recreation.)
Activities contributing to offsetting aquatic resource losses and the preserving of native species from potential extinction, due to water projects developed by the Federal government or under the licensing or regulation of the Federal government.
Special Conservation: (Sustain biological communities/ensure quality of recreation.)
Activities conducted in cooperation with States, Tribes, and Universities focusing on localized partnerships for enhancement of fish populations.

Justification of Program Changes

	2004 Budget Request	Program Changes (+/-)
Hatchery Operations $(000)	$40,812	+$4,805
FTE	*467*	*+15*

The FY 2004 budget request for Hatchery Operations is $40,812,000 and 467 FTE, a net program increase of $4,805,000 and 15 FTE from the 2003 enacted level.

Travel Reduction: (-$107,000):

The request includes a $107,000 reduction for travel expenses to be accomplished by curtailing unnecessary travel and relocation costs, as well as increased teleconferencing and use of central meeting locations.

The Service employs approximately 8,000 permanent full time staff at approximately 700 field stations supported by seven regional offices and the Washington D.C. headquarters office. Many of the staff transfer from one field location to another or accept assignments at the Washington or regional offices to expand their professional experience or increase the level of responsibility in the organization. Service employees frequently travel to meetings such as professional association national, state, or local chapter quarterly and annual meetings. The Service recognizes that there is significant benefit to be obtained by having employees work at different locations and at increasing levels of responsibility. The proposed decrease will not eliminate the opportunity for relocating, but will increase the time between moves.

Direct, mission related travel and travel associated with training will not be impacted by the proposed reduction. The Service will carefully evaluate policies and procedures related to attendance at meetings and conferences and will institute policies to limit redundancy in attendance.

Information Technology Reduction (-$88,000):

The Department is undertaking significant information technology reforms to improve the management of IT investments, to improve the security of systems and information, and to realize short and long-term efficiencies and savings. The Department is taking a corporate approach that will include consolidated purchases of hardware and software, and the review of select IT functions including centralized help desks, email support, web services, centralized network management, and coordination of training. The Service estimates a savings of $6.6 million by participating in these Departmental efforts.

In addition, the Service will also achieve an additional $2.0 million in savings in other operational IT investment by centralizing management of geographic software, implementing desktop standards, consolidating the Service messaging platform, and other similar activities.

The Hatchery Operations program's share of this reduction of $88,000 reflects the anticipated savings from these cost cutting measures and reforms.

General Program Increase (+$5,000,000):

The NFHS will focus the additional funds in three priority areas in accordance with the *DOI's Draft Strategic Plan*, the Fisheries Program's *Vision for the Future*, the OMB PART Review, and more specific Regional step-down plans linked to the DOI goals. These three priority areas will be: Recovery (+$1.6 million); Restoration/Recreation (+$2.5 million); and Science and Technology (+$0.9 million).

Activities to be conducted with the additional funds will significantly enhance the Service's abilities to support the *DOI's Draft Resource Protection Goal* to sustain biological communities by *Managing Populations to Self-sustaining Levels for Specific Species*, and *Improving Information Base, Resource*

Management Practices, and Technical Assistance. The funds will also assist the Service in supporting the *DOI*'s *Draft Recreation Goal to Enhance the Quality of Recreation Opportunities.* In order to better integrate budget with program performance, new NFHS performance measures have been developed in cooperation and coordination with the Department and OMB to measure accomplishments of the NFHS that contribute toward the Department's goals to provide for better management of NFHS activities.

The funds will also support priority activities relating to the Fisheries Program's *Vision for the Future* objectives for aquatic resource conservation and management (objectives 2.1, 2.2, 2.3, 2.7), public use (objective 3.1), cooperation with Native Americans (objective 4.1), and leadership in science and technology (objective 5.1).

Specific activities to be accomplished with these additional funds are described below.

- Recovery (+$1,600,000): The increased funding will enhance the NFHS ability to contribute toward the *DOI's Draft Intermediate Outcome: Manage Populations to Self-sustaining Levels for Specific Species* under the *Strategic Goal of Resource Protection - Biological Communities*, and the Fisheries Program's *Vision for the Future* (objective 2.1). The increased funding in FY2004 will be used to conduct 25 priority projects that will implement an additional 15[2] priority recovery tasks prescribed by approved Recovery Plans. The increase also will allow the NFHS to improve the percentage of post-stocking survival targets as prescribed by approved Recovery Plans for hatchery propagated listed species, and will enable the NFHS to maintain four additional genetic refugia for listed and imperiled species. Specifically, the NFHS will be able to enhance hatchery production and genetic refugia for listed species, such as pallid sturgeon and greenback cutthroat trout. These projects showcase a focus on sound science and implementing techniques such as predictive genetic modeling and cryopreservation, that increase program efficiency and speed recovery. These projects also reflect partnerships in which our uniquely federal role complements that of other partners to speed recovery of important species in a well planned and coordinated manner. Species selection was determined by a balanced consideration of ecological, social, and economic factors and needs from among high priority projects listed in the FONS database. These projects are listed below.

- Baseline data will be established in FY2003 to report accomplishments in FY2004 for NFHS program recovery activities through new performance measures developed to meet goals in the *DOI's Draft Strategic Plan*, the Fisheries Program *Vision for the Future* and the Administration's PART Assessment of the NFHS. Although preliminary baseline data have been identified for most new measures, current efforts to develop baseline data have not identified sufficient information on specific post-stocking survival targets in Recovery Plans. The Service will continue to work to identify data for post-stocking survival and to establish FY2004 performance targets for this measure.

[2]More than one project may contribute toward the same task identified within the related Recovery Plan.

FY2004 NFHS Operations Increase Request Recovery	
Coleman NFH (CA) FONS #2002-002	$6,000
Genetic Management of a Captive Broodstock Program to Recover Winter-run Chinook The project will continue genetic research and analysis of endangered winter-run Chinook salmon to produce genetic management plans for the Livingston Stone NFH's (CA) broodstock programs. Genetic verification of adults used in the propagation program is critical to the preservation of the genetic integrity of the remaining naturally-produced population of winter-run Chinook salmon and is essential for the recovery of the species.	
Abernathy FTC (WA) FONS #2002-002	$45,000
Ecological Interactions Between Hatchery and Wild Fish in the Wind River, WA This project will evaluate ecological interactions between hatchery fish, listed wild fish, and other native fish to adequately address ESA issues. The results from this project will help in management decisions for the operation of the Carson NFH (WA) and minimize risks to wild and listed fish while providing sport and tribal fishery benefits.	
Dexter NFH & FTC (NM) Abernathy FTC (WA) Warm Springs FTC (GA) Ennis NFH (MT) Jackson NFH (WY) FONS #61230-2003-002	$118,000 $84,000 $56,000 $70,000 $70,000
Develop, Operate and Maintain a Relational Database to Assimilate and Use Genetic Profiles of Fish for Assessment and Monitoring of Hatchery and Wild Fish Populations This project will develop an interactive relational database/program that will provide hatchery managers with a method of integrating genetic information into daily operations. This project will provide a process with which managers can evaluate and monitor hatchery stocks and progeny. The expected accomplishment of this project will be to meet recovery targets by improving management of production, broodstock, and refugia populations.	

Eagle Creek NFH (OR) $28,000
FONS # 2002-001

Video Monitoring Passage of Wild Fish in Eagle Creek, Clackamas River Basin, OR

This project will use video technology to accurately estimate wild fish production in Eagle Creek, Oregon. Accurate production estimates will be used to develop recovery plans for several salmonid species found in this River Basin and to assist Eagle Creek NFH in minimizing impacts to wild fish.

Bozeman FHC (MT) $11,000
FONS #2000-003

Monitoring Fish Health - Razorback Sucker

This project will provide comprehensive fish health management for cultured razorback stocks to assist in reaching recovery goals. Using non-lethal sampling methods and advanced testing methods such as DNA testing and bacteriological identification, captive Razorback suckers will be screened for fish pathogens of concern. Test results will be used to implement a fish health management plan to comply with the National Fish Health Policy and Utah State regulatory requirements.

Dexter NFH &TC (NM) $6,000
FONS #2002-004

Razorback Sucker Population Monitoring and Population Dynamics Analyses for Upper Lake Mohave, AZ

This project will provide scientific technical assistance for analysis of population dynamics and gamete collection for hatchery production at the Willow Beach NFH (AZ). Funds will be used to examine a new population of the endangered razorback sucker in upper Lake Mohave that will contribute to the natural biological diversity in razorback suckers in the lower Colorado River basin.

Mora NFH &TC (NM) $73,000
FONS #2002-004

Biological Evaluations of Threatened and Endangered Fishes

This project will develop and implement scientific, species-specific protocols for culturing native Southwestern fishes. Protocols will address propagation techniques to maximize biological diversity and reduce stress during hatchery activities. Funds will be used to evaluate the stress responses of fish and develop stress mitigation techniques such as the use of appropriate temperatures, photoperiod, salts, and anesthetics and tranquilizers for larval, juveniles, and adult fish. This project will establish propagation techniques called for in recovery plans.

Mora NFH &TC (NM) $34,000
FONS #2002-011

Performance and Fitness of Fish Produced from Cryopreserved Milt

This project will develop methods to cryogenically preserve the sperm of various imperiled species of the Southwestern U.S. Cryogenically preserved sperm will be used to produce offspring which will be compared to the performance and fitness of offspring produced using non-cryopreserved sperm in a scientific study. The cryopreserved sperm and/or resulting offspring will be analyzed for potential loss of essential materials and genetic variability. Expected accomplishments of this project will include development of efficient methodologies to address recovery plan tasks.

Genoa NFH (WI) $55,000
FONS #2002-001

Recover Threatened Mussel Populations of the Upper Mississippi River Basin

This project will develop propagation techniques of fish hosts and juvenile mussels to be placed in suitable habitat within the Upper Mississippi River basin. Diet and feeding trials to allow for extended rearing and the development of adult captive broodstock populations will reduce the risk of disease transfer to hatchery fish residing on station and circumvent fluctuations in natural environments that inhibit broodstock collection. Expected accomplishments of this project will improve broodstock management data as called for in mussel recovery plans.

Neosho NFH (MO) $34,000
FONS #2002-004

Endangered Species Protection (Blind Ozark Cavefish)

This project will analyze water quality in Hearrell Spring, a part of the Neosho NFH water supply that houses this species. The Ozark cavefish is a very sensitive fish and human population growth and industrial expansion have contaminated portions of the ground water supply. Expected accomplishments of this project will include assurance of a suitable water supply for this endangered species.

Warm Springs FTC (GA)	$61,000
Natchitoches NFH (LA)	$61,000
Garrison Dam NFH (ND)	$61,000

FONS #2000-005

Cryopreservation of Gametes for Pallid Sturgeon Recovery

This project will upgrade the repository for cryopreserved pallid sturgeon sperm samples. Sperm samples cryopreserved over the past four years at Garrison Dam NFH have established a successful nucleus for a pallid repository. This project will enable the Service to place available sturgeon sperm samples in repository for future use in recovery efforts directed at the imperiled pallid sturgeon, as well as all other sturgeon species. Expected accomplishments of this project will include development of efficient methodologies as called for in the recovery plan.

Bears Bluff NFH (SC)	$95,000

FONS #2001-001

Development of Propagation Techniques and Refugia for Atlantic Sturgeon

This project will enhance the development of culture and refugia techniques for Atlantic sturgeon. The development of culture techniques for this species will focus on research projects to determine specific environmental problems encountered by wild sturgeon in natal rivers, provide a source of fish for re-stocking efforts in extirpated rivers, and provide refugia for strains of Atlantic sturgeon that are in danger of extinction. This project is expected to enhance restoration activities along the South Atlantic coast and meet captive propagation tasks called for in the fishery management plan for this species.

Dale Hollow NFH (TN)	$45,000

FONS #2000-001

Propagation of Imperiled Freshwater Mussels

This project will accelerate recovery of imperiled freshwater mussels by expanding the existing mussel propagation capabilities of the Dale Hollow NFH/Wolf Creek NFH Complex. Funding will be used to coordinate removal of mussels from the wild, develop refugia and culture facilities, and to develop spawning techniques. This project will complete the propagation component of recovery plans for freshwater mussel species.

Edenton NFH (NC) $22,000
FONS #1999-002

Sturgeon Population Evaluations in the Roanoke-Tar-Neuse-Cape Fear Ecosystem

This project will collect information on the presence/absence of sturgeon populations in the Roanoke-Tar-Neuse-Cape Fear ecosystem. Sturgeon in the Albemarle/Pamlico Sound estuary will be captured and tagged to monitor movements and population dynamics. This project is expected to enhance the establishment of self-sustaining populations of endangered short-nosed sturgeon into its historical range and provide up-to-date biological data for management of all sturgeon species in the RTNCF ecosystem.

Orangeburg NFH (SC) $34,000
FONS #1999-006

Freshwater Mussels Refugia

This project will establish refugia/propagation programs at the hatchery to meet recovery plan goals for Southeastern imperiled freshwater mussels. Funding will be used to coordinate removal of mussels from the wild, to develop refugia and culture facilities, to determine host species requirements, and to determine suitable water quality requirements for selected species. This project will help accelerate the recovery of imperiled freshwater mussels into suitable restored habitats.

Harrison Lake NFH (VA) $17,000
FONS #2003-002

Evaluation of Harrison Lake NFH to Determine Suitability to Rear/Provide Refuge For Endangered Mussels

This project will assess the Harrison Lake NFH to determine if it is suitable to propagate or act as a refugium for the federally listed James spiny mussel or the dwarf wedge mussel. Recommendations will be made regarding what modifications, if any, need to be made to make the facility more suitable, including water quality, bio-security, and infrastructure. Determining the efficacy of propagating or providing refuge for endangered mussels at Harrison Lake will be critical to establishing a first-ever refugia to support the recovery of these species.

White Sulfur Springs NFH (WV) $56,000
FONS #1999-002

Propagating Imperiled Native Mussels at a National Fish Hatchery

This project will develop propagation techniques that can be used in captive breeding programs for threatened or endangered mussel species. Juvenile mussels propagated at the White Sulfur Springs NFH will be stocked into streams to augment and restore native populations that are at risk of extinction. This project will play a significant role in the conservation of freshwater mussels by serving as both a refugia for imperiled species and by providing a location to conduct applied research on a production scale.

Nashua NFH (NH) $45,000
FONS #2001-003

Dwarf Wedge Mussel Restoration and Preservation Study

This study will test the suitability of Atlantic salmon as a fish host for the dwarf wedge mussel. Atlantic salmon are currently being propagated at the Nashua NFH for restoration, and might be a key component in the preservation and enhancement of the mussel. This project will help maintain the endangered Dwarf wedge mussel in southern New England while restoring Atlantic salmon to their historical rivers.

Richard Cronin NSS (MA) $45,000
FONS # 2000-402

Propagation of Native Mussels at the Richard Cronin National Salmon Station

This project will enable the Richard Cronin National Salmon Station to serve as a refugium for imperiled mussel species and provide a location to conduct applied research on a production scale, thereby enhancing mussel recovery in New England.

Craig Brook NFH (ME) $100,000
FONS # 2003-001

Genetic Characterization and Evaluation of Atlantic Salmon Broodstock

This project will genetically characterize new Atlantic salmon brood stock used to restore wild populations in Maine. The project will provide essential information about 1) genetic integrity; 2) genetic changes over time; and 3) genetic similarity between brood fish. The expected accomplishment will improve the quality of Atlantic salmon broodstock for recovery by maximizing genetic diversity of hatchery-produced fish and assist in meeting the recovery tasks identified in the fisheries management plan for the species.

Saratoga NFH (WY) $55,000
FONS # 1999-001

Expanding and Maintaining the Wyoming Toad Husbandry Facility

This project will expand and maintain the captive propagation of the Wyoming toad as required in the Recovery Plan for this endangered species at the Saratoga NFH. Toads are held in refugia at the Hatchery and progeny are released at Mortenson Lake NWR, WY. The expected accomplishment of this project is to accelerate Wyoming toad recovery by completing Recovery Plan tasks for this species.

Bozeman FHC (MT) $28,000
FONS # 2000-001

Researching Pallid Sturgeon Iridovirus

This project will develop more reliable and accurate diagnostic methods for detection of iridoviral agent in captive pallid sturgeon. An expected accomplishment of this project will provide vital information for NFH's to produce healthy pallid sturgeon to meet priority recovery targets set by the Recovery Plan.

Neosho NFH (MO) $55,000
FONS #: 2002-008

Reproductive Viability of Suspected Intersex Pallid Sturgeon in the Middle Mississippi River

This project will determine whether fish health relates to reproductive potential of pallid sturgeon. Blood chemistry and gonadal inspection will be used to identify suspected intersex shovelnose sturgeon. The study will determine if the intersexing effect is limiting the production of viable gametes and survival of eggs and fry in shovelnose sturgeon, and by extension, pallid sturgeon. This information will enable development of strategies to circumvent this problem as an obstacle to pallid sturgeon recovery.

Saratoga NFH (WY) $45,000
FONS #: 2000-001

Establishing Captive Broodstock of Threatened Greenback Cutthroat Trout

This project will restore threatened populations of Greenback cutthroat trout in Rocky Mountain National Park, CO, and will aid in meeting other objectives of the Species' Recovery Plan. Funds will be used to develop and maintain a captive broodstock at Saratoga NFH. Progeny will be used to reestablish Greenback populations.
The expected accomplishment of this project will be to assist with reintroduction goals and eventual de-listing.

Lahontan NFH (NV) $55,000
FONS #: 2003-002

Bull Trout Redd and Spawner Surveys in the Jarbidge River, Nevada and Idaho

This project will refine recovery criteria and prioritize implementation of recovery tasks in the Recovery Plan chapter for the bull trout. Data obtained would be used to: 1) identify bull trout spawning habitats; 2) identify temporal and spatial variation in spawning activity; 3) evaluate effectiveness of various bull trout recovery actions. The expected accomplishment of this project will provide baseline information which is essential for prioritizing recovery actions and critical habitat designation for this species.

- Restoration/Recreation (+2,500,000): This proposed increased will be used to strengthen Fisheries Program activities to conserve and restore aquatic resources to self-sustaining levels, and enhance the NFHS's ability to contribute toward the *DOI's Draft Intermediate Outcome: Manage Populations to Self-sustaining Levels for Specific Species* under the *Draft Strategic Goal of Resource Protection - Biological Communities,* the *DOI's Draft Intermediate Outcome: Enhance the Number of Recreation Opportunities* under the *Draft Strategic Goal of Recreation - Ensure Quality Experience and Enjoyment of Natural and Cultural Resources on DOI Managed and Partnered Lands and Water,* and the Fisheries Program's *Vision for the Future* (objectives 2.2, 2.3, 2.7, 3.1, and 4.1). The Service plays a vital role in restoring declining species to preclude future listing and to provide the American people with quality recreational opportunities. The NFHS is a leader in restoring fish and other aquatic species through captive propagation. Many of the fish species restored have significant recreational value.

- The increased funding in FY2004 will be used to conduct 33 priority projects that will implement an additional 25 tasks[3] prescribed in approved restoration and fishery management plans. It is anticipated that the increased funding will improve performance from 85 percent to 93 percent of restoration production tasks achieved; from 87 percent to 91percent of applied science and technology tasks implemented; and from 86 percent to 91percent for marking and tagging targets met.

- Baseline data will be established for FY03 to report under the new performance measures through continuous validation with the Regions as project tasks are implemented. Although preliminary baseline data have been identified for most new measures, current efforts to develop baseline data have not identified sufficient information on specific post-stocking survival targets in Fishery Management Plans. The Service will continue to work to identify data for post-stocking survival and to establish FY2004 performance targets for this measure.

- The following projects were selected on the basis of a balanced consideration of ecological, social, and economic benefits and needs, and will help restore species such as salmon and inland trout. These high priority projects identified in FONS focus on increasing program efficiency through evaluation of hatchery products and through the implementation of innovative tools and techniques. Project selection was also based on coordination with partners, thereby increasing the likelihood of a good "return" on dollars spent, in the form of successful restoration and increased opportunities for recreational fishing.

[3]More than one project may contribute toward the same task identified within the related restoration or fishery management plan.

FY2004 NFHS Operations Increase Request
Restoration/Recreation

Abernathy FTC (WA) $56,000
FONS # 2000-008

Improve Diagnostic Techniques to Reduce Impact of Disease on Salmon Species

This project will develop a new methodology in cooperation with the U.S. Geological Survey, Biological Resources Division, to expand rapid diagnostic techniques to detect primary disease pathogens of declining, threatened, and endangered salmon species raised in Pacific Northwest Region NFH's. This methodology would provide the sensitivity to detect all major bacterial pathogens of salmon species, increase the level of sensitivity of the test, and reduce the time for confirmation of fish pathogen identification and diagnosis.

Abernathy FTC (WA) $17,000
FONS # 2002-008

Ecology of Juvenile Fish Released From Warm Springs National Fish Hatchery, OR

This project will monitor juvenile spring chinook released from Warm Springs NFH (OR) into the Clackamas River, OR to determine the impacts of rearing hatchery fish under "living stream conditions." Information gathered from this study will provide fisheries managers with valuable knowledge on the production of high quality fish species for recovery and restoration.

Little White Salmon NFH (WA) $56,000
FONS # 1999-001

Evaluate the Survival of Coho Salmon Released in Tribal Restoration Efforts at Two Different Locations to Determine Suitability for Use

This project will evaluate post-release performance of coho salmon released at Little White Salmon NFH compared to those released at Willard NFH (WA) to evaluate relative survival of coho salmon released from the two facilities, and to recommend adaptations to program management. Information gathered from this project will address priority restoration targets in Western Washington, and assist in meeting the U.S. v. Oregon requirements of developing naturally spawning, locally adapted broodstocks on Tribal lands.

Little White Salmon NFH (WA) $47,000
FONS # 1999-006

Hatchery Evaluation Annual Stock Assessment

Makah NFH (WA) $56,000
FONS # 1999-004

Quinault NFH (WA) $56,000
FONS # 1999-006

Chinook Mass Marking to Support Selective Fisheries

These projects will develop external fin mark (mass mark) technology for chinook salmon at the two hatcheries so that when fish are encountered in a mark-selective fishery, the marked fish (healthy hatchery population) can be retained while the depressed wild fish (unmarked) can be released. Expected accomplishment is the implementation of this mass marking technology that is essential to monitor and evaluate restoration activities for this species.

Idaho FHC (ID) $62,000
FONS # 2000-001

Salmon and Steelhead Genetic Sample and Data Collection

This project will increase the collection and processing of genetic samples on Columbia River Basin salmon and steelhead stocks. Expected accomplishment is to utilize such critical information for management decisions on the effectiveness of meeting priority recovery and restoration targets of salmon and steelhead.

Genoa NFH (WI) $112,000
FONS # 2001-003

Isolation Facility to Develop Wild Broodstocks for Restoration in the Great Lakes

This project will utilize an isolation facility for egg collection and fertilization to replace old, domesticated broodstocks, or to start new broodstocks of lake trout and coaster brook trout. Expected accomplishment is to accelerate the rate of reestablishing self-sustaining, reproducing populations to achieve the restoration goals of these species in the Great Lakes.

Iron River NFH (WI) $112,000
FONS # 2001-001

Native Coaster Brook Trout Restoration in Lake Superior

This project will develop and maintain a captive spawning population of native coaster brook trout and support production at Iron River NFH. Propagated brook trout will be reintroduced into waters on the south shore of Lake Superior. Expected accomplishment is to meet priority restoration targets, as called for in the Coaster Brook Trout Restoration Plan.

Erwin NFH (TN) $67,000
FONS # 1999-005

Preliminary Assessment: Restoration of Native Brook Trout into Suitable Cherokee Reservation Waters

This project will inventory existing populations and habitat to assess the potential to restore native brook trout in suitable Cherokee Indian Reservation waters. The population inventory will include preliminary genetics and fish health evaluations. An important outcome of this project will be cooperation between the Service and the Tribe toward developing a management plan, and eventual restoration of self-sustaining brook trout populations in their historic Reservation habitat. The recreational value of brook trout also will provide economic benefits to the Reservation.

Harrison Lake NFH (VA) $84,000
FONS # 2000-002

American Eel Marking and Redistribution at Harrison Lake National Fish Hatchery

This project will provide hatchery reared American eels for reintroduction into historical spawning habitats along the entire Atlantic coast. American eels would be donated by partners for holding and marking at the Harrison Lake NFH for later release. An important outcome of this project will be development of stock data to be used in projects by partners to address specific eel management questions.

Lamar NFH and NE Fishery Center (PA) $94,000
FONS # 1999-003

Determine Cause of Declining Egg Survival in Atlantic Salmon eggs and improve kelt sperm quality

This project will conduct field trials at broodstock hatcheries in consultation with Bozeman FTC (MT), Abernathy FTC (WA), and BRD-Wellsboro (PA) to compare developed diets against a standard diet. Additionally, egg survival rates, sperm viability, sensitivity of eggs to mechanical shock, and fecundity will be compared. An important outcome of this project will be to enhance hatchery products called for in management plans for the Maine Rivers, Connecticut River, and Merrimack River. Increased egg survival also will reduce the cost associated with the need to hold additional broodstock in order to meet egg production goals.

Lamar NFH & NE Fishery Center (PA) $66,000
FONS # 1999-009

Evaluation of Hatchery Products Utilizing an Instream Laboratory

This project will use in-stream incubation techniques to produce "wild" fry for comparisons of "wild" vs. hatchery- incubated fry and parr. Specifically, the project will verify calcein marking techniques in "wild" habitats; evaluate intraspecific competition relative to growth, survival, and condition factor; introduce endemic stream predators to evaluate predator avoidance capabilities of "wild" and hatchery fish; evaluate disease resistance of "wild" vs. hatchery produced fish in a stream known to harbor the causative agents of whirling disease, furunculosis, infectious pancreatic necrosis, and other fish diseases.

Lamar NFH & NE Fishery Center (PA) $45,000
FONS # 1999-016

Developing Techniques to Sample American Shad Larvae and Juveniles

This project will field-test and assess the efficiency of several different larval and juvenile sampling gears, modified for use in shallow water systems to improve sampling of pre-juvenile and juvenile shad in their rearing habitats to help quantify the contribution from natural production and fry stocking efforts. This project will enhance restoration efforts for American shad in the Susquehanna River basin.

Lamar FHC & NE Fishery Center (PA) $112,000
FONS # 2001-001

Fish Disease Impacts Upon Wild and Hatchery-Reared Atlantic Salmon

This project will evaluate protocols used at Service production facilities, analyze samples from wild fish, and assess methods to control and eradicate serious fish pathogens, such as the recently discovered infectious salmon anemia virus, and other exotic diseases that could devastate hatchery populations and could be introduced to wild fish. Information collected in this project will enhance the NFHS' ability to meet production tasks called for in management plans for the Maine Rivers, Connecticut River, and Merrimack River restoration programs.

Pittsford NFH (VT) $34,000
FONS # 53280-2001-002

Assessment of Ongoing Cooperative Lake Champlain LAS Restoration

This project will tag and monitor landlocked Atlantic salmon strains reared at Pittsford NFH to determine which strains are more cost-effective to rear. Evaluation success will be measured by which strain returns to spawning rivers most successfully. Development of lake specific strains of landlocked salmon will then be possible by selecting for successful adult returns to natal spawning streams and habitats. This project will determine the strain most suited for Pittsford's annual production of 160,000 landlocked Atlantic salmon, and will improve efficiency at the station.

Pittsford NFH (VT) $84,000
FONS # 53280-1999-001

Increase Landlocked Atlantic Salmon Production for Restoration in the Lake Champlain Basin

This project will restore Landlocked salmon to their native range, by using an additional 35,000 hatchery reared smolts reared at Pittsford NFH. Fund will also be used to implement disease management and prevention plan, to ensure healthy smolts are stocked into Lake Champlain. An Additional increase in fry production for stocking in tributaries will also enhance returns to tributaries by 25%.

Bozeman FTC (MT) $53,000
FONS # 1999-001

Improve capabilities for maintaining Fluvial Arctic Grayling Broodstock

This project will develop and maintain a captive broodstock of Big Hole River fluvial Arctic grayling from the Upper Missouri River at the Bozeman FTC. A genetically complete broodstock of fish from the last remnant fluvial population of grayling in the continental US is housed at the Bozeman FTC, helping to prevent listing. Further genetics studies will be conducted to determine if changes are occurring with wild fish, and compare them with progeny of this broodstock. This project will help fulfill requirements of the multi-agency (FWS, BLM, NPS, USFS) restoration plan to conserve genetic diversity and eradicate bacterial kidney disease before progeny can be stocked into restored habitats.

Jackson NFH (WY) $28,000
FONS # 1999-012

Determining Native Fish Losses as a Result of Irrigation Diversions: Fish Passage

This project will determine the extent of fish passage into irrigation diversions on Flat Creek where intake structures are not screened to prevent fish from entering the ditches. The project also will determine the extent of hybridization of rainbow trout with native Snake River cutthroat trout, and how many native fish, primarily Snake River cutthroat trout, whitefish, and smaller species such as sculpins, annually die in the irrigation ditches or fields. This project will provide managers with alternatives for conservation of native species.

Jackson NFH (WY) $7,000
FONS # 2003-002

Genetic Testing of Native Snake River Cutthroat Trout Broodstock

This project will establish genetic and meristic testing of native Snake River cutthroat trout for evaluation of future broodstock introduced into the hatchery population from the wild. This information will be evaluated over time to see if the variability or the bilateral meristic counts have changed as a result of captivity.

Bozeman FHC (MT) $28,000
FONS # 1999-006

Developing Advanced Genetically Based DNA Screening for the Detection of Fish Pathogens

This project will further develop DNA analysis capabilities and molecular biology expertise to enhance abilities to screen large volumes of fish samples and confirm the presence of fish pathogens. In addition, the project will enhance the use of non-lethal sampling techniques benefitting a variety of endangered fish species.

Bozeman FHC (MT) $11,000
FONS # 1999-008

Quality Control/Assessment: Fish Health Diagnostic Techniques

This project will compare and contrast new technology with standard confirmation testing methods for validation of test reliability. Quality control/assessment procedures will be implemented to test the accuracy of genetic-based methods and serologic techniques. In addition, equipment will be professionally certified, and all reagents, reference stocks, protocols and procedures will be standardized nationwide with other Service FHC's. The expected accomplishment of this project is to establish cooperative efforts with other Service fish health laboratories to provide a greater level of confidence in obtaining accurate detection results.

Bozeman FHC (MT) $17,000
FONS # 2002-001

Sturgeon Fish Health Diagnostics-Extension

This project will provide services for screening and diagnostic work on cultured and wild sturgeon species nationwide. This specialized laboratory service will involve the use of advanced screening techniques with virological cell culture methods, histopathology, immunohistochemistry, and electron microscopy. This project will contribute toward meeting objectives of recovery plans that call for captive propagation, in particular for programs that are propagating sturgeon species as prescribed by restoration and recovery plans.

Bozeman FHC (MT) $11,000
FONS # 2003-001

Fish Health Monitoring-Paddlefish

This project will provide health testing of wild and cultured paddlefish to determine the presence or absence of significant pathogens. Captive stocks will be monitored prior to stocking to further protect the wild populations in both Montana and South Dakota. This project will help meet management plan objectives, and will provide fish health information for management decisions, and for monitoring paddlefish populations to ensure continued survival of healthy stocks in the Upper Missouri River.

Gavins Point NFH (SD) $56,000
FONS # 1999-002

Improving Culture Techniques and Maintaining Genetically Sound Paddlefish Populations

The project will rear and stock genetically-sound juveniles and investigate new animal drugs to enhance spawning. This project will enhance the ability to successfully spawn, rear, tag, stock, and monitor stocking success for approximately 25,000 juvenile paddlefish called for in management plan objectives. These actions will help prevent the decline and subsequent listing of the paddlefish.

Gavins Point NFH (SD) $56,000
FONS # 1999-007

Restoring Paddlefish to Tribal Waters of Lake Francis Case, SD

This project will expand paddlefish restoration in Lake Francis Case by 20,000 fish, and expand paddlefish stocking into portions of Lake Francis Case under Tribal jurisdiction. This project will also include evaluation and monitoring work associated with the stocking. This project will enhance Tribal partnerships in paddlefish stocking in Lake Francis Case.

Alchesay-Williams Creek NFH (AZ) $6,000
FONS # 2003-002

Apache Trout Broodstock Genetics Monitoring/Maintenance Program

This project will provide a genetic analysis of each year class of selected Apache trout brood fish with respect to asymmetrical morphology and genetic variation measured by DNA microsatellite techniques in order to maximize genetic diversity of fish produced for restoration and recreational fishing. The expected accomplishment of this project will be to maintain genetic diversity of Apache trout broodstock by monitoring potential changes in genetic structure that may affect growth, vitality and survival of offspring.

San Marco NFH & TC (TX) FONS # 1999-008	$56,000

Northern Largemouth Bass Broodstock Program

This project will restore the native Northern LMB Broodstock Program at the FTC. This project will reestablish an important component of the NFHS's partnership program with the States and Native American Tribes. Stocks of juvenile bass will be acquired and reared to establish the broodstock and a production program. This project is expected to reestablish the native northern largemouth bass broodstock program, an important NFHS program highly valued by the Service's partners.

Genoa NFH (WI) FONS #: 2003-001	$224,000

Restore Lake Sturgeon Populations in the Upper Midwest

This project will produce 30,000 additional lake sturgeon fingerlings to meet resource and fisheries management plan needs. The expected accomplishment of this project will be to enhance the restoration this species that has declined throughout its historic range.

Abernathy FTC (WA)	$70,000
Dexter NFH & FTC (NM)	$45,000
Mora NFH & FTC (NM)	$50,000
Bozeman FTC (MT)	$107,000
FONS #2003-010	

Recovery and Restoration of Imperiled Native Inland Salmonid Fishes

This project will develop specific feed formulations for the larval, juvenile, and maturation phases of development for imperiled inland trout. Diets will be formulated by examination of current deficiencies and then tested and improved if necessary. This project will enhance the NFHS's ability to recover listed salmonid fish species by producing healthy fish for introduction.

Abernathy FTC (WA)	$23,000
Dexter NFH & FTC (NM)	$45,000
Mora NFH & FTC (NM)	$59,000
Bozeman FTC (MT)	$107,000
Warm Springs FTC (GA)	$45,000

FONS #2003-011

Recovery and Restoration of Imperiled Cypriniformes Through Hatchery Rearing

This project will improve current commercial feeds needed for captive propagation of the threatened and endangered Cyprinids (minnows) and Catostomids (suckers) to meet various recovery plans. The studies conducted under this project will re-formulate and test current commercial fish feed to achieve the objectives. This project will enhance the NFHS's ability to recover listed Cyprinids and Catostomids such as the Lost River sucker, Rio Grande silvery minnow, robust redhorse sucker, and bonytail chub by producing healthy fish for re-introduction.

Mammoth Springs NFH (AR) $56,000
FONS #2001-001

Reintroduction and Restoration of Lake Sturgeon to Their Historic Southern Range

This project will acquire selected lots of lake sturgeon from genetically diverse broodstock, genetically typed at the Warm Springs FTC (GA), and moved to the Mammoth Spring NFH where spawning, rearing, and stocking techniques for captive propagation will be developed. This project will advance the restoration of lake sturgeon to their historic southern range in Tennessee, Georgia, and North Carolina in cooperation with State partners.

LaCrosse Fish Health Center (WI) $95,000
FONS # 2000-004

Lake Sturgeon Restoration on the Menominee Indian Reservation, Wisconsin

This project will enhance the Service's lake sturgeon recovery and restoration efforts on Tribal lands. Funding will be used to ensure (via improved analytical and screening protocols) that diseases are not introduced to Service facilities with wild fish, and then subsequently transferred to Tribal waters. This project will reduce disease epizootics in lake sturgeon eggs and juvenile fish reared at Service hatcheries, and hence, maintain the health and genetic integrity of adult lake sturgeon restored in Tribal waters.

Iron River NFH (WI) $54,000
FONS #: 2003-001

Egg Isolation Agreement to Benefit US Fish and Wildlife Service Fish Hatchery System

This project will produce and maintain additional captive spawning populations of lake trout and brook trout. An MOU will be renegotiated with Keweenaw Bay Indian Community in 2003, and an additional one negotiated with the Red Cliff Indian Community to maintain wild gametes (fertilized eggs) in Tribal isolation facilities, and increase the number of strains held at one time. The expected benefit of this project will be to enhance the genetic variability of captive spawning populations and protect them from imported diseases.

- Science and Technology (+$900,000): The proposed $900,000 increase will be used to augment science and technology in NFHS program activities to conserve aquatic resources and the habitats that sustain them, and will enhance the NFHS's ability to contribute toward the *DOI's Draft Intermediate Outcome: Improve Information and Assessments used for Decision Making* under the *Draft Strategic Goal of Resource Protection - Biological Communities*, and the Fisheries Program's *Vision for the Future* (Objective 5.1).

- The additional $900,000 will be used to conduct 16 projects addressing the NFHS science and technology objectives on fish species most of which support valuable recreational fisheries. Specific activities to be conducted include: 1) accelerating implementation of the Aquatic Animal Drug Approval Program and increase the number of technical sections of new animal drug applications from 17 to 23; 2) improving the analytical capabilities of the Fish Health Centers to increase the number of DOI watershed units examined for the prevalence of certain pathogens in fish in the wild from 20 percent to 23 percent under the National Wild Fish Health Survey; 3) implementing standardized, state-of-the-art, health-related risk analysis protocols (*Service Manual*) for movement of aquatic species; 4) completing the Handbook of *U.S. fish and Wildlife Service Fish Health Procedures and Protocols*; and 5) developing five additional new techniques and culture technology tools.

- The following projects will provide applied science support services and tools to Federal and State fisheries managers, and will contribute to the quality of management decisions that impact our Nation's fishery resources. Projects were selected from the FONS database based on a balanced determination of ecological, social, and economic need, with an emphasis on improving fish health in both hatcheries and the wild.

FY2004 NFHS Operations Increase Request
Science and Technology

California-Nevada FHC (CA) $56,000
FONS # 2003-002

Quality Assurance/Quality Control Database/Website - Fish Health Technical Support to FWS & Partners

This project will develop and maintain a national database and website of technical information to implement two policies and procedures adopted by the national Fish Health Program. The site will support nine FHC's and seven FTC's across the country, an estimated 90-120 partners participating in the NWFHS on an annual basis, and the 66 NFH's. This project will expand the national fish health database quality control procedures, to provide more consistent, reliable, and effective service in fish health matters. Expected accomplishments will include national standardization and enhancement of scientific leadership of the national Fish Health Program.

Carson NFH (WA) $11,000
FONS #: 2000-001

Threatened Steelhead: Disease and Population Restoration in the Wind River Basin

This project will assess the causative factors of a parasitic infestation that may be limiting steelhead survival in the Wind River basin. The project will also assess feasibility of using Carson NFH, located on the Wind River, to help recover steelhead if their populations decline to levels deemed unrecoverable by natural spawning and rearing. Similar parasite infestations exist in NW rivers and this work will serve as a model for threatened steel head populations. Information derived from this study will guide future interagency management decisions about the recovery of threatened and endangered populations, enabling USFWS to meet Trust responsibilities by making more fish available to Tribal fishermen.

Lower Columbia River FHC (WA) $28,000
FONS #: 2002-002

Ecological Interactions between Hatchery and Wild Fish in the Wind River, WA

This project will evaluate ecological interactions between hatchery fish, listed wild fish, and other native fish by conducting instream and laboratory studies. The project will involve lab experiments conducted in an experimental "living" stream at the hatchery, monitoring releases of spring chinook salmon in the Wind and Columbia Rivers, utilization of non-lethal techniques for instream sampling, measures of habitat use, community ecology, and fish health parameters. This collaborative project will include participation by USGS-BRD, Washington Department of Fish and Wildlife, Yakama Indian Nation, and the Carson NFH, Columbia River FPO, and Abernathy FTC. This project will provide data to make management decisions for the operation of Carson NFH, and to minimize risk to wild and listed fish while providing sport and Tribal fishery benefits.

Olympia FHC (WA) $28,000
FONS #: 2003-003

Disease Impacts of Hatchery and Wild Fish in the Methow River System

This project will perform standardized tests on wild and hatchery salmon captured above and below Winthrop NFH (WA), to assess the impact of fish hatcheries on wild populations, and to make valid management decisions on hatchery and wild fish during recovery efforts within the Methow River. The test results will be compared to fish disease profiles of salmon in the hatchery to determine if the hatchery has any impacts. This project will be conducted in cooperation with the National Wild Fish Health Survey, Washington Department of Fish and Wildlife, the Yakima Nation and the Mid-Columbia Fisheries Resource Office, and will help determine what impacts disease has on hatchery versus wild fish.

Idaho FHC (ID) $67,000
FONS #: 1999-119

Wild Fish Pathogen and Disease Data Collection

This project will collect fish and assay samples from throughout Idaho and eastern Washington and Oregon, to help in recovery efforts and to preclude additional listings. Data collected will be entered into and maintained in the National Wild Fish Health Survey. This project will expand the National Wild Fish Health Survey for fish stocks in the Pacific Northwest, assist in restoration and recovery efforts, and will provide data for management decisions for salmon and steelhead in the Snake River basin.

Tishomingo NFH (OK) $22,000
FONS #: 1999-003

Develop Techniques for Mussel Culture

This project will modify culture units, identify fish hosts, and refine culture techniques for restoration of imperiled mussel species in the Arkansas-Red Rivers Ecosystem. The expected accomplishment of this project is to identify specific life cycles of the mussels in the Arkansas-Red Rivers Ecosystem that are jeopardized by habitat loss or alteration.

Warm Springs FTC (GA) $168,000
FONS #: 2003-009

Enhanced Fisheries Management Through the Use and Maintenance of the Fish Strain Registry Database

This project will continue maintenance and development of the National Fish Strain Registry. A database on cryopreserved sperm samples and the Wild Fish Survey Database will be dovetailed to the Strain Registry so that information regarding the availability of cryopreserved sperm from specific strains and disease information from specific watersheds can be reviewed by fishery managers. This project will allow the databases used by fish health biologists to communicate and act in concert, thereby effectively multiplying their information storage capabilities for fisheries management data.

Norfork NFH (AR) $6,000
FONS #: 2003-901

***Ichthyoptherys* Visual Assessment in Rainbow Trout**

This project will examine methods for observing cultured Rainbow trout using polarized lenses, to aid detection of *Ichthyoptherys multifilis*, otherwise known as "Ich." Ich is a contagious disease in both warm and cold water fish culture that has devastating impacts on fish health. Observing fish through various polarized lenses will allow determination of which type lens reveals the presence of ich best, allowing for more rapid and accurate disease diagnosis. This project will result in better detection, diagnosis, and treatment of ich in fish.

Lamar NFH and NE Fishery Center (PA) $6,000
FONS #: 2003-901

***Trichodina* Detection in American Shad**

This project will examine methods for detecting *Trichodina* sp. in American Shad. *Trichodina* sp. is a skin parasite in warmwater fish, which leads to decreased survivability of the fish host. This project will result in earlier detection of *Trichodina* in fish, aiding in treatment.

Creston NFH (MT) $6,000
FONS #: 2003-901

Fungus Treatment in Bull Trout

This project will examine methods for treating skin fungus in bull trout, an endangered species. All fish have some susceptibility to skin funguses, due to the nature of the aquatic environment. Determining methods of treating skin fungus in bull trout will increase survivorship of captive bull trout populations and will increase the general health of fish in captive propagation.

Division of the NFHS (DC) $280,000
FONS #: 2002-005

Establish a Program to Ensure Service Drug Approval Efforts are Focused on Complete NADA Submissions

This project will insure that the drug approval methods currently used by the Service reflect complete NADA data submissions. Complete NADA packages require a variety of data other than that currently being generated by the Service. The generation and submission of these data are currently being managed/coordinated outside of the Service, and to date, that management/coordination has resulted in numerous program delays and setbacks. This project will expand the Service's role to include overall NADA management/coordination and data collection for the Service, to ensure the success of Service drug approval efforts.

Division of the NFHS $168,000
FONS #: 2002-006

Screening of Replacement Compounds for Chloramine-T to Control BGD & External Flavobacteriosis

This project will explore replacement compounds for Chloramine-T. Efforts to obtain a Chloramine-T new animal drug approval (NADA) for the control of bacterial gill disease (BGD) and external flavobacteriosis in fish were curtailed when FDA concluded that Chloramine-T may be carcinogenic. Hence, the Service has been left without an effective and/or legal mechanism to treat BGD. BGD often results in more hatchery losses than any other single disease. This project will result in the identification of an alternative drug(s), and will ensure aquatic species under management are disease free and fit for transfer into natural ecosystems.

Alchesay-Williams Creek NFH (AZ) $45,000
FONS # 2002-002

Hatchery Management of Nonnative Crayfish

This project will evaluate the hatchery's water intake system structures and fish distribution methodologies to determine the feasibility of preventing the spread of nonnative crayfish present in the hatchery water supply through ongoing fish distribution activities as identified in a HACCP analysis. The expected project accomplishment will be to determine the possibility of eliminating the spread of nonnative crayfish through state-of-the-art water management technology.

Alchesay-Williams Creek NFH (AZ) $11,000
FONS # 2001-108

Compliance with EPA NPDES Discharge Permit Limits

This project will permit biweekly analysis of hatchery influent and effluent water quality parameters to establish direct impacts of hatchery operations on hatchery discharges to the North Fork of the White River. Data collected will be utilized to report net loading in effluent discharges due to hatchery operations. The expected project accomplishment will be to reduce NPDES permit violations and create a database of nutrient and TSS values to accurately negotiate future permit limits regulating hatchery effluents.

Pinetop Fish Health Center (AZ) $56,000
FONS # 2002-003

Maintaining Health of Native Fish Species on Hatcheries and in the Wild

This project will ensure that imperiled native fish species being moved to and from, and maintained on, NFH's are free of destructive pathogenic organisms to prevent loss of these critical fishery resources. These activities will meet requirements/provisions of recovery plans that involve careful monitoring and control of fish diseases. The expected accomplishment of this project will be to expand disease sampling and diagnosis in streams that harbor listed species and on hatcheries that maintain and culture these species.

La Crosse FHC (WI) $39,000
FONS #: 2000-005

Lake Trout Restoration (Fish Health Profiles)

This project will establish a database for detecting trends in the health and physiological conditions of hatchery raised lake trout at Service hatcheries. Autopsy-based indices will be used to relate the consequences of biochemical and physiological alterations to observe changes in the individual or the population as a whole. This project will enhanced fitness, survival, recruitment, and accelerated recovery of more than 3 million lake trout stocked each year in the Great Lakes. Indices developed and maintained in the data base will provide information on performance of lake trout strains stocked into the wild, and will assist in determining how well lake trout are coping once they are stocked.

Hatchery Maintenance and Rehabilitation

2004 Program Overview
The NFHS maintenance efforts at its diverse field stations directly support the *DOI's Draft Resource Protection Goals to Sustain Biological Communities* and to *Manage Populations to Self-sustaining Levels for Specific Species* by maintaining key assets on NFH's, FTC's, and FHC's in efficient and safe working condition. Proper maintenance of the facilities is essential to helping sustain aquatic biological populations by ensuring the success of recovery efforts and restoration objectives identified in Recovery Plans and Fishery Management Plans. Changes such as refurbishing ponds at Genoa NFH (WI) and at White Sulphur Springs (WV) to rear listed species of mussels in former fish rearing ponds support the NFHS's evolving role in resource protection. Keeping critical water supplies flowing is also crucial, such as rehabilitation of a corroded saltwater supply system at Bears Bluff (SC) to maintain imperiled shortnose sturgeon. New performance measures were developed as part of the *DOI's Draft Strategic Plan* that will measure the facility condition index (FCI) of such mission critical water management assets.

Condition Assessment and Service Assets Maintenance Management System (SAMMS) - The NFHS has been conducting condition assessments of its field stations for the past two years, completing 25 assessments (32 percent) out of its 79 field sites. Entry in the Real Property Inventory database of assessment data for all field inspections has been accomplished, and has resulted in the identification of over $44 million in deferred maintenance needs for the assets evaluated at the 25 sites. However, at this time, these assessments have not been certified by the National Condition Assessment coordinator. Field estimates are that the facility condition index (FCI) for these assessed properties will be in excess of 15 percent. The NFHS will continue to work with the Department, the Service's Divisions of Refuges and Engineering, and its regional and field coordinators in implementing two significant improvements in the management of the Service's facility information: condition assessments and SAMMS.

- Integration of Service information systems will bring 40 additional NFHS field stations into SAMMS for a total of 53 out of a total of 86 field stations, a Service adaptation of the MAXIMO software package that has been adopted within the Department.

- The condition assessment process will be accelerated as the NFHS plans to complete 20 additional assessments for a total of 61 out of a total of 79 field station sites that require condition assessments, exceeding the annual target of 16 per year in order to complete baseline assessments at all of its field facilities by the close of FY 2005.

Mission Critical Water Management - Maintenance of mission critical water management property items of NFHS facilities in good condition is essential for the NFHS to meet its aquatic resource mission while complying with national environmental standards. These items include those assets that directly influence the quality or quantity of water delivered and discharged, or assets that determine the actual rearing or holding environment of the fish or other aquatic species being held. Keeping NFHS mission critical water management assets in the best condition supports DOI *Draft Resource Protection Goal* of *Sustaining Biological Communities* as both water quality and quantity are critical elements in sustaining biological communities. Critical assets currently comprise $660 million of the NFHS's $982 million in asset replacement value. The mission critical asset concept is being incorporated into the facilities management strategy of the NFHS to address core needs and problems by examining and adjusting existing information so only critical assets are targeted, and by improving accountability and management responsiveness.

FY 2002 Program Performance Accomplishments

The program focused its efforts on critical activities supporting *DOI's Draft Strategic Goal* of *Resource Protection* to *Sustain Biological Communities*, to *Manage Populations to Self-sustaining Levels for Specific Species* by focusing resources on deferred maintenance associated with mission critical assets. For example, FY 2002 accomplishments include:

- Ensuring high quality water for restoration of Apache trout populations by repairing the walls and protective fencing, replacing the roof, and bolstering support beams of shelters that protect the spring water supply from wind- or bird-borne contamination at Williams Creek NFH (AZ).

- Facilitating conservation, restoration, and recovery of Atlantic salmon by repairing fifty-six 32-ft circular rearing tanks at White River NFH (VT). The deteriorated tanks had caused clogged fish screens, increasing Atlantic salmon mortalities and threatening the health of the fish that survived. Repairs will reduce future labor costs, fish health risks, and rearing expenses.

- Facilitating restoration of Atlantic salmon in the Merrimack River watershed by the replacement of a malfunctioning water supply pump at Nashua NFH (NH). The condition of the old pump imperiled four year classes of Atlantic salmon broodstock and could have brought a lengthy and expensive delay to this segment of the Atlantic salmon Restoration Program.

- The program completed 32% of condition assessments, compared with 40% planned.

FY 2003 Performance Goal Estimates

In FY 2003, the program will continue to focus support on the *DOI's Draft Strategic Goal* of *Resource Protection* to *Sustain Biological Communities* to *Manage Populations to Self-sustaining Levels for Specific Species* with the $14.3 million provided in the President's budget. Significant projects planned for FY 2003 include:

- Increasing the reliability of data used to enable NFHS facilities to effectively and efficiently meet conservation goals by increasing the number of condition assessments conducted in FY 2003 from the 13 completed in FY 2002 to16 using staff expertise as well as consulting firms.

- Assuring that maintenance funding is used to accomplish priority conservation projects by having ten additional NFHS field stations use the SAMMS for facilities management. This effort, which includes the Divisions of Refuges and Engineering, will be fully underway by FY 2005.

- Ensuring the safety of employees, visitors, and volunteers at NFHS facilities by accomplishing approximately 100 projects to correct safety problems, such as the replacement of ground fault breakers for the fish rearing units at White Sulphur Springs NFH (WV), eliminating serious electrical shock risks to employees.

Justification of 2004 Program Changes

		2004 Budget Request	Program Changes (+/-)
Hatchery Maintenance	$(000's)	17,215	+ 2,964
	FTE	*0*	*0*

The FY 2004 budget request for Hatchery Maintenance and Rehabilitation is $17,215,000, a net program increase of $2,964,000 from the 2003 enacted level. The Program will continue to strive to provide the tools to ensure accomplishment of the Department's draft strategic goals with the 17.2 M proposed for FY 2004.

Travel Reduction (-$9,000):

The request includes a $9,000 reduction for travel expenses to be accomplished by curtailing unnecessary travel and relocation costs, as well as increased teleconferencing and use of central meeting locations.

The Service employs approximately 8,000 permanent full time staff at approximately 700 field stations supported by seven regional offices and the Washington D.C. headquarters office. Many of the staff transfer from one field location to another or accept assignments at the Washington or regional offices to expand their professional experience or increase the level of responsibility in the organization. Service employees frequently travel to meetings such as professional association national, state, or local chapter quarterly and annual meetings. The Service recognizes that there is significant benefit to be obtained by having employees work at different locations and at increasing levels of responsibility. The proposed decrease will not eliminate the opportunity for relocating, but will increase the time between moves.

Direct, mission related travel and travel associated with training will not be impacted by the proposed reduction. The Service will carefully evaluate policies and procedures related to attendance at meetings and conferences and will institute policies to limit redundancy in attendance.

Information Technology Reduction (-$27,000):

The Department is undertaking significant information technology reforms to improve the management of IT investments, to improve the security of systems and information, and to realize short and long-term efficiencies and savings. The Department is taking a corporate approach that will include consolidated purchases of hardware and software, and the review of select IT functions including centralized help desks, email support, web services, centralized network management, and coordination of training. The Service estimates a savings of $6.6 million by participating in these Departmental efforts.

In addition, the Service will also achieve an additional $2.0 million in savings in other operational IT investment by centralizing management of geographic software, implementing desktop standards, consolidating the Service messaging platform, and other similar activities.

The Maintenance and Rehabilitation program's share of this reduction of $27,000 reflects the anticipated savings from these cost cutting measures and reforms.

Deferred Maintenance, (+$3,000,000):

The $3.0 million increase for deferred maintenance will be used to participate more fully in Departmental standardizing and modernizing efforts for the management of physical plant facilities. In turn, more facilities in proper working condition will enable the Service to participate effectively in management plans for recovery and restoration purposes. In these increasingly cross-agency efforts, improving the credibility and reliability of the NFHS will help the Service maintain its natural resource leadership and will lead to more effective conservation efforts.

Funds will target bringing critical water management structures back into proper operational condition. For the NFHS, critical water management structures include only those water facilities essential to distribute water throughout the production systems of the hatchery, i.e., those that, should they fail for even a few minutes during the 24 hour - 7 day per week production schedule, would result in loss of valuable fish. This group of structures must be maintained in good or fair condition in order to rear healthy, genetically-fit fish to meet aquatic resource management needs. Specifica1ly, the NFHS will: 1) complete an additional 16 mission critical water management deferred maintenance projects for assets such as aged and deteriorating pumps, wells, pipelines, raceways and water treatment systems that are the heart of every hatchery; 2) meet Departmental expectations in conducting Condition Assessments on 20 additional field stations, thereby completing Condition Assessments on 75 percent of its field stations in FY 2004; and 3) integrate its real property inventory, maintenance management, and assessment information into a unified Service information system using MAXIMO™ software as required by the Department.

Two and a half million of the $3 million increased funding will be directed toward the 16 additional high priority deferred maintenance projects identified in the Maintenance Management System database. (See listing of projects below.) These projects have been identified as critical to keeping field stations in good working order; especially our mission critical water management assets. As a result of these activities, fewer losses of fish will occur from malfunctioning pumps, pipelines, valves and deteriorating electrical systems, enabling the Service to meet its partnership commitments to produce high quality fish for restoration and recovery, and also produce other aquatic species more reliably, while also providing safer work sites and visitor areas.

The remaining $500,000 will enable the NFHS to complete Condition Assessments on 75 percent of its field stations in FY2004, and implement MAXIMO - information management software that will allow the Service to integrate its various legacy databases currently used to manage its facilities. More consistent budget plans and more accurate accomplishment reports should result.

FY 2004 Hatchery Maintenance and Rehabilitation Increase Request ($3,000,000)	
Makah NFH (WA) MMS Project No. 13240.2000004	$260,000
Rehabilitate Water Storage Impoundment This project will rehabilitate the water supply impoundment - silt accumulation has reduced the reserve capacity of this water supply. This has reduced the water's retention time, increased the water supply temperature, and resulted in an increase in plant growth, all of which have adversely affected the hatchery's ability to raise healthy fish. Dredging is needed to return the impoundment to its original capacity, ensuring continued success of salmon and steelhead production programs. This project will result in better water quality for Makah NFH, resulting in better quality fish production.	

Dexter NFH & FTC (NM) $35,000
MMS Project No. 22220.2000002

Wells Maintenance

This project will rehabilitate five wells and pumping stations supplying water to rearing ponds and wet laboratory. Pumps must be pulled annually, with thorough inspections and repair of the pump shaft, pump bowls, column pipe, and electric motors. Cyclical maintenance on the wells and pumping stations is critical to the survival of over 15 threatened and endangered fish species being maintained and cultured on the facility including the bonytail, Colorado pikeminnow, razorback sucker, Desert pupfish, and Chihuahua chub. This project will result in better water quality for Dexter NFH&FTC, resulting in better survival of fish.

Orangeburg NFH (SC) $522,000
MMS Project No. 42240.1989013

Replace 1911 Fish Holding House

This project will replace the seriously deteriorated holding house built in 1911. This 92 year old fish culture building is in very poor condition and poses safety risks to hatchery employees. A sink hole that developed nearby damaged the integrity of the building foundation and load bearing walls, causing the ceiling to crack and crumble. Existing electrical wiring is not in compliance with NEC and also poses safety risks to employees. This project will result in the replacement of an unsafe building with a new building.

Creston NFH (MT) $4,000
MMS Project No. 61220.1988146

Repair Hatchery Room Water Supply Pipe

This project will rehabilitate the deteriorated 120-foot long water supply pipe and associated control valves from the main well to the hatchery room. This well supplies the only disease free water available for early rearing of cutthroat trout, which is critical to carrying out the station mission. Pipe failure would seriously jeopardize highly important Tribal and mitigation programs. This project would replace the east side valves and piping to hatchery building, to ensure constant delivery of well water and making it easier and safer to mix or utilize water from main supply line in emergencies.

Makah NFH (WA) $18,000
MMS Project No. 13240.2001015

Rehabilitate Water Screen Pump Number 7

This project will rehabilitate the intake screen cleaning water pump and motor Number 7, used to wash debris from the pumping station screens on the hatchery's main water supply. A pump failure would allow debris to plug screens and prevent water flow to fish rearing units. Failure poses a serious risk to fish survival and to the overall production of imperiled fall chinook salmon. This project will result in a water delivery system which is safer and less prone to failure.

Bears Bluff NFH (SC) $235,000
MMS Project No. 41288.1995004

Complete Rehabilitation of Three Ponds

This project will complete rehabilitation of Ponds 1, 2, and 3 including the replacement of badly deteriorated cement pond kettles, associated fish collection catch basins and water control structures. These structures were all constructed in the 1950's and seriously damaged or destroyed by past hurricanes. These ponds are currently unusable for fish culture but are critically needed for use in the recovery of the endangered shortnose sturgeon currently held and propagated at this facility. This project will result in the full functioning of the Bear's Bluff facility.

Quinault NFH (WA) $117,000
MMS Project No. 13250.2002013

Modify Fish Ladder

This project will complete seriously needed modifications to the existing fish ladder, passageway, and channel to Hatchery Creek water supply. Modifications will prevent migratory fish from entering the hatchery's fish production ponds. Current migratory fish access is detrimental to fish health and to the fishery management plan goals and objectives this station is charged with. These include steelhead trout, fall chinook salmon, and coho salmon programs important not only to Northwest fish populations, but also to the Quinault Tribe. This project will result in less contamination of the hatchery facility by native fish species.

Willow Beach NFH (AZ) $12,000
MMS Project No. 22240.1998006

Repair Inoperable Pump

This project will install a cooling unit to control the internal cabinet temperatures of hatchery's main water supply pump. This will allow the unit to run within its normal operating temperature, reducing constant equipment failure, and eliminate risk to important Service fish production programs. Reliable flow of quality water is critical to fish survival and the advancement of recovery programs for the razorback sucker and the bonytail. This project will result in better water quality for fish culture at the facility.

North Attleboro NFH (MA) $40,000
MMS Project No. 53270.1998004

Repair Water Control Structure

This project will repair the badly deteriorated water control structure (dam and dike) that stores water used for incubating Atlantic salmon eggs during cold weather months and as a warm water supply during summer months. If the structure fails, ongoing Atlantic salmon programs will be jeopardized. The cost to repair damages could increase dramatically as extensive erosion around hatchery buildings and water distribution lines would occur. This project will result in greater reliability for the water supply at the facility.

Lahontan NFH (NV) $30,000
MMS Project No. 14240.2001004

Modify Settling Basins

This project will modify existing water delivery system (pipes and valves) to the settling basins to eliminate contamination sources and improve efficiency. Contamination could jeopardize threatened Lahontan cutthroat trout raised at the facility. Removal of the existing water distribution line and water distribution box, and installing new waste water line to settling basins will be done. This project will result in a cleaner, more reliable water supply.

San Marcos NFH & FTC (TX) $24,000
MMS Project No. 21230.2003001

Replace Water Chiller and Heater Units

This project will replace aging and occasionally inoperable water chiller and heater units, including replacement of condensing units, heaters controllers, sensors, and pumps. These units are critical in maintaining water quality for T&E species in recirculating systems, such as the Fountain darter. This field station has a very limited water supply and relies on reticulation/reuse of most of its water supply. During the summer it is critical to have the chilling units in fully operational condition or recovery programs for several central Texas aquatic species could be impacted. This project will result in a more reliable water supply and better water quality.

Genoa NFH (WI) $152,000
MMS Project No. 32210.2000002

Replace Wells with High Capacity Wells and Tower

This project will replace three old and deteriorated pumped wells with two new high capacity wells and a water tower. Existing wells are located at three sites at this hatchery and water flows directly to individual rearing units. By consolidating the new wells and using a water tower, excess pumped water can be stored and used when needed, especially during an emergency such as power outages. Fishery management programs that would benefit are Coaster brook trout and Lake sturgeon. Well failure in the past has led to the loss of significant wild fish broodstock. This project will result in a safer, more reliable water supply.

Craig Brook NFH (ME) $450,000
MMS Project No. 53372.2003004

Replace Alamoosook Lake Intake Structure and Pipeline

This project will replace the Alamoosook Lake intake structure and pipe line, needed because the quantity of Alamoosook water required for operation increased with the endangered species program. Without replacement, fish production will remain below program of requirements and serious loss of fish could occur if the pipeline fails. Atlantic salmon recovery programs would be greatly benefitted by completion of this project. This project will result in more efficient production of endangered fish species.

Willow Beach NFH (AZ) $351,000
MMS Project No. 22240.1999002

Replace Ten Deteriorated Raceways

This project will replace ten 8' X 80' severely deteriorated concrete raceways, metal walkways, and screen slots in B-Bank. The concrete strength is only 1,400 psi, and the structures are crumbling and leaking. Water management is poor due to the seepage and leaks between tanks and the base, and fish disease in one unit easily spreads into adjacent units. The situation also presents a safety hazard to staff and visitors with the walking surfaces being uneven and deteriorating. This project will enhance production for recovery of Razorback sucker and bonytail chub.

Leadville NFH (CO) $100,000
MMS Project No. 65230.1990002

Replace Lake 1 Water Line

This project will replace 1,850 ft of deteriorated 16" steel pipe that supplies water to fish production raceways. This pipeline is leaking, and has been patched several times. Continued neglect will result in the loss of the water supply to raceways and ponds, and seriously impact the ability of the hatchery to partake in restoration effort for cutthroat trout. This project is one aspect of the facility retrofit for Alternative 2 of the Leadville NFH Environmental Assessment (2000), that seeks to eliminate whirling disease from this pivotal Federal hatchery.

Williams Creek NFH (AZ) $150,000
MMS Project No. 22211.2002003

Rejuvenating Critical Water Supply with Oxygen Supplementation

This project will replace the existing cascading aerators with low head oxygen units, oxygen generation equipment, oxygen distribution lines, and to install laminar flow devices and new head screens to reduce oxygen stripping at raceway heads. The declining spring flows and oxygen levels are affecting the Apache trout restoration program, and impacting both this natural resource as well as Tribal economies. This project would restore hatchery production to near historical capability and would also improve the quality of fish being reared at the hatchery.

Total Funding Request for Mission Critical

Water Management Assets:	**$2,500,000**	**16projects**

Division of the National Fish Hatchery System $70,000
MMS Project No. 94100.2003001

Fully Fund Comprehensive Condition Assessment Process

This project will fully fund condition assessment efforts at a total cost of $300,000 annually and enable 20 additional assessments to be conducted in FY 2004, exceeding the annual target of 16 in order to move into full compliance with Departmental expectations. Per Departmental directive, the NFHS has been conducting condition assessments of its field stations since FY 2001, with 25 assessments completed through the end of FY 2002. Condition assessment information will result in improved statements of Service assets and liabilities, and should help the NFHS target its mission critical water management assets. This project will result in the conducting of condition assessments per Departmental expectations.

Division of the National Fish Hatchery System $430,000
MMS Project No. 94100.2003002

Fully Fund Implementation of MAXIMO (SAMMS) Software

This project will, together with the Service's Refuge and Engineering programs, implement an integrated information management system for its facilities that will eventually replace the databases on which it is currently dependent. The Service, as all DOI bureaus, has chosen MAXIMO, and is adopting it in phases. With 3 field stations currently converted and 10 additional anticipated in FY 2003, the additional funding will enable the NFHS to fully fund its $630,000 (20 percent) share of the anticipated FY 2004 Service costs for its Service Assets Maintenance Management System (SAMMS) of $3.15 million. Forty additional NFHs, FTCs, and FHCs will begin using SAMMS in FY 2004, with all NFHS field stations expected to have switched by the end of FY 2005. SAMMS benefits should include the integration of property inventories, finance, and repair needs that should lead to improvement in maintaining mission critical assets, and to quicker and more accurate reports on project accomplishments. This project will result in better data management for facilities maintenance needs.

Total Funding Request for Information Management: $500,000 2 projects

Grand Total Funding Request for
NFHS Maintenance and Rehabilitation: $3,000,000 18 projects

Relationship of Program Changes to Performance Goals

This increase will improve the NFHS's capabilities to achieve the *DOI's Draft Resource Protection Goal to Sustain Biological Communities on DOI Managed and Influenced Lands and Waters by Improving the Information Base, Resource Management Practices, and Technical Assistance.* In order to better integrate budget with program performance, new NFHS performance measures have been developed for

this Outcome in cooperation and coordination with the Department and OMB to measure accomplishments of the NFHS that contribute toward the Department's *Draft Goals* to provide better management of NFHS activities. These measures, and the additional funding, will help ensure that: 1) NFHS information will have greater credibility, relevance, and tie-in to recent Departmental developments in facilities management, and 2) mission critical assets within the NFHS are restored to proper operational condition.

The activities that will be funded also correspond to and support priority actions relating to the Fisheries Program's *Vision for the Future* objectives for aquatic resource conservation and management (objectives 2.1, 2.2, 2.7) and public use (objectives 3.1, 3.5).

Program Performance Summary

The National Fish Hatchery System is fully committed to implementing the new Draft DOI Strategic Plan in FY 2004. To carry this out, the Program has developed new performance measures that more accurately measure Program contributions towards meeting the DOI Draft End and Intermediate Outcome Goals. Performance measures identified with a hyphen (–) are new measures which support goals in the Draft DOI Strategic Plan. These measures were not included in previous performance reporting efforts. In most cases, no historical accomplishment information has been collected related to these performance measures, and no performance targets have been identified for FY2002 and FY2003. These new activities will be measured, actual accomplishments will be reported, and baseline conditions for these new performance measures will be verified in FY2003. In FY2004, these new activities will become part of the DOI and Service's strategic plans; performance goals may be refined as a result of FY2003 performance accomplishments reported.

DOI Draft Strategic Goal: Resource Protection - End Outcome Goal: Improve Health of Watersheds, Landscapes, and Marine Resources that are DOI Managed or Influenced in a Manner Consistent with Obligations Regarding the Allocation and Use of Water

DOI End Outcome Measure: Surface Waters: % of surface waters that meet EPA approved Water Quality Standards *(At this time this program is not contributing to this end outcome measure. The program is using this measure as a link to the Draft DOI Strategic Plan.)*

DOI Intermediate Outcome: *Restore and maintain proper function to watersheds and landscapes*

DOI Intermediate Outcome Measures / FWS Performance Measures	FY 2001 Actual	FY 2002 Plan	FY 2002 Actual	FY 2003 Plan (as of 12/02)	FY 2004 Plan	Change (2003 to Proposed 2004)
Water Pollution: % of NFHS stations that meet environmental requirements for effluent as defined by Federal, Tribal, and State law.	59/62 95%	–	59/62 95%	60/62 97%	60/62 97%	0

DOI Draft Strategic Goal: Resource Protection - End Outcome Goal: Sustain Biological Communities on DOI Managed and Influenced Lands and Waters in a Manner Consistent with Obligations Regarding the Allocation and Use of Water

DOI End Outcome Measures: % of threatened or endangered species listed a decade or more that are stabilized or improved *(At this time this program is not contributing to this end outcome measure. The program is using this measure as a link to the Draft DOI Strategic Plan.)*

DOI Intermediate Outcome: *Manage Populations to self-sustaining levels for specific* species

DOI Intermediate Outcome Measures / FWS Performance Measures	FY 2001 Actual	FY 2002 Plan	FY2002Actual	FY 2003 Plan (as of 12/02)	FY2004Plan	Change (2003 to Proposed 2004)
Population enhancement or reintroduction: (1) % of Recovery Plan production tasks implemented	–	–	–	48/121 40%	50/121 41%	+1
(2) % of applied science and technology tasks implemented as prescribed by Recovery Plans	–	–	–	98/180 53%	113/180 63%	+10
(3) # of fish and aquatic animal populations that are held in refugia	–	–	–	48	52	+4
(4) % of post-stocking survival targets met, as prescribed by Recovery Plans, for hatchery propagated listed species	–	–	–	TBD	TBD	TBD[4]

DOI Draft Strategic Goal: **Resource Protection** **- End Outcome Goal:** Sustain Biological Communities on DOI Managed and Influenced Lands and Waters in a Manner Consistent with Obligations Regarding the Allocation and Use of Water

DOI End Outcome Measure: % of species of management concern that are managed to self-sustaining levels, in cooperation with affected States and others, as defined in approved management plans *(At this time this program is not contributing to this end outcome measure. The program is using this measure as a link to the Draft DOI Strategic Plan.)*

DOI Intermediate Outcome: *Manage Populations to self-sustaining levels for specific species*

DOI Intermediate Outcome Measures / FWS Performance Measures	FY2001Actual	FY 2002 Plan	FY 2002 Actual	FY 2003 Plan (as of 12/02)	FY2004Plan	Change ((2003 to Proposed 2004)
***Population enhancement or reintroduction*:** (1) % of fishery management plan production tasks implemented	–	–	–	97/114 85%	106/114 93%	+8
(2) % of applied science and technology tasks implemented as prescribed by fishery management plans	–	–	–	74/85 87%	93/102[5] 91%	+4

New task will be added to some of the fishery management plans as existing science and technology task are implemented.

[1]Current effort to develop baseline information has not identified sufficient information on specific post-stocking survival targets in recovery plans. The Service will continue to work with the Regions to identify baseline data for post-stocking survival targets to establish FY04 performance goals.

(3) % of post-stocking survival targets met, as prescribed by Fishery Management Plans, for hatchery propagated depleted species	–	–	–	2/4 50%	2/4 50%	0[6]
Intermediate Outcome: *Improve information and assessments used for decision making*						
DOI Intermediate Outcome Measures **/ FWS Performance Measures**	**FY 2001 Actual**	**FY 2002 Plan**	**FY 2002 Actual**	**FY 2003 Plan (as of 12/02)**	**FY 2004 Plan**	**Change (2003 to Proposed 2004)**
Shared data: (1) # of new applied aquatic scientific and technologic tools with partners	–	–	–	7	11	+4
(2) # of technical sections of new animal drug applications submitted for fish and aquatic populations	–	–	–	17	23	+6
(3) # of new techniques and culture technology tools (non-production genetics) developed	–	–	–	9	13	+4
Facilities Condition: (1) Conservation and biological research facilities are in fair or better condition as measured by the Facilities Condition Index. (Recreation, Serving Communities)	–	–	–	–	Baseline to be developed	–
(2) % of facilities that have a calculated Facility Condition Index (based on completed Condition Assessments) **[MANAGEMENT]**	12/79 15%	24/79 30%	25/79 32%	41/79 52%	61/79 77%	+25

DOI Draft Strategic Goal: Recreation - End Outcome Goal: Ensure a Quality Experience and Enjoyment of Natural and Cultural Resources on DOI Managed or Partnered Lands and Waters
DOI End Outcome Measure: Satisfaction with quality of experience (e.g., Goals Met: Sporting/Physical Experiences, Natural Experiences, Educational Experiences; Needs met: Information; Facilities; Wait Time) *(At this time this program is not contributing to this end outcome measure. The program is using this measure as a link to the Draft DOI Strategic Plan.)*
DOI Intermediate Outcome: *Enhance the Quality of Recreation Opportunities*

[2] New tasks will be added to some of the fishery management plans as existing science and technology tasks are implemented.

[3] As with the related recovery targets, current effort to develop baseline information have not identified sufficient information on specific post-stocking survival targets in fishery management plans.

DOI Intermediate Outcome Measures **/ FWS Performance Measures**	**FY 2001 Actual**	**FY 2002 Plan**	**FY 2002 Actual**	**FY 2003 Plan (as of 12/02)**	**FY 2004 Plan**	**Change (2003 to Proposed 2004)**
Effective Implementation: (1) % of mitigation production targets met	–	–	–	33.0M/ 35.4M (fish) 93%	33.0M/ 35.4M (fish) 93%	0
(2) lbs/$ of healthy rainbow trout as efficiency measure for recreation	–	–	–	0.37lbs/$	0.37lbs/$	0
Intermediate Outcome: *Provide Effective Interpretation and Education Programs*						
DOI Intermediate Outcome Measures **/ FWS Performance Measures**	**FY 2001 Actual**	**FY 2002 Plan**	**FY 2002 Actual**	**FY 2003 Plan (as of 12/02)**	**FY 2004 Plan**	**Change (2003 to Proposed 2004)**
Facilitated Programs: # of visitors to NFHS facilities	2,167,480	–	2,733,958	2,038,515	2,500,000	461,485

Other Draft Department End Outcome Goals and Intermediate Goals Supported by These Funds:

1) DOI End Outcome Goal 1.3 - Protect Cultural and Natural Heritage Resources

- DOI Intermediate Outcome Goal - Increase knowledge base of cultural and natural heritage resources managed or influenced by DOI
- DOI Intermediate Outcome Goal - Reduce degradation and protect cultural and natural heritage resources
- DOI Intermediate Outcome Goal - Increase Partnerships, volunteer opportunities, and stakeholder satisfaction

2) DOI End Outcome Goal 4.3 - Fulfill Indian Trust Responsibilities

- DOI Intermediate Outcome Goal - Improve Management of Land and Natural Resource Assets

This Page Intentionally Left Blank.